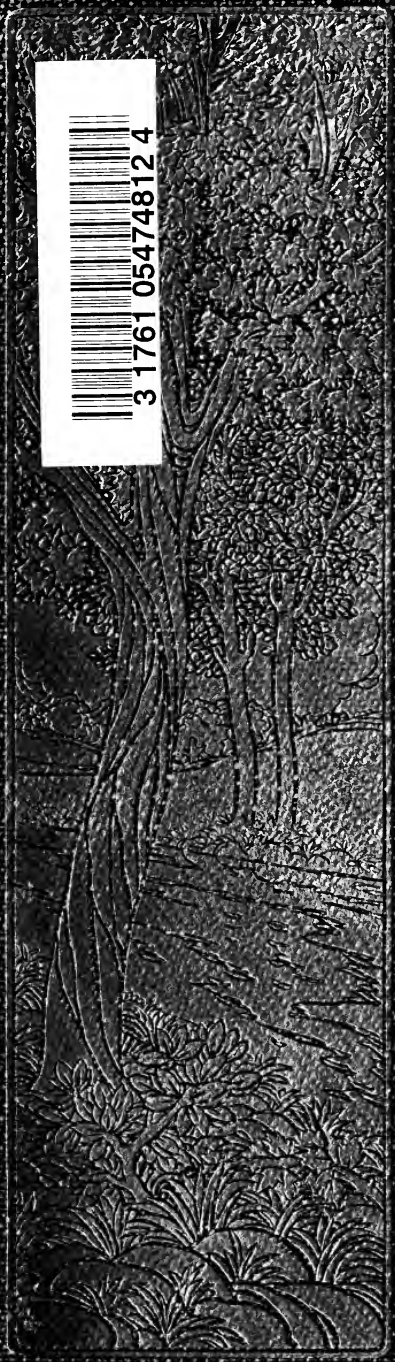

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The DEER FAMILY

By

THEODORE ROOSEVELT

and others

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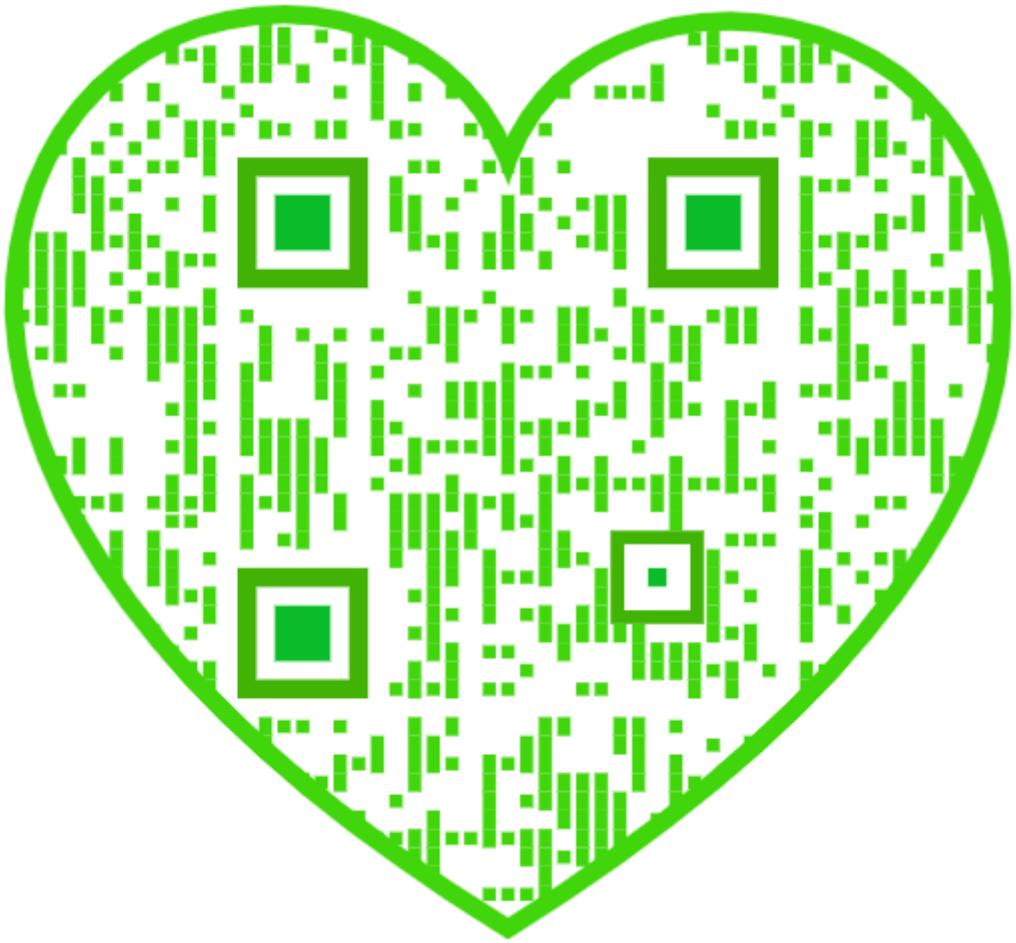

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EDITED BY

CASPAR WHITNEY

THE DEER FAMILY

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THE DEER FAMILY

BY

THEODORE ROOSEVELT
T. S. VAN DYKE, D. G. ELLIOT
AND
A. J. STONE

ILLUSTRATED BY CARL RUNGIUS AND OTHERS

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FOREWORD

THIS volume is meant for the lover of the wild, free, lonely life of the wilderness, and of the hardy pastimes known to the sojourners therein.

THEODORE ROOSEVELT.

VICE-PRESIDENT'S ROOM,
WASHINGTON, D.C.,
June, 1901.

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By Theodore Roosevelt

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THE DEER AND ANTELOPE OF NORTH AMERICA

By Theodore Roosevelt

THE DEER AND ANTELOPE OF NORTH AMERICA

CHAPTER I

INTRODUCTORY

With the exception of the bison, during the period of its plenty, the chief game animals followed by the American rifle-bearing hunter have always been the different representatives of the deer family, and, out on the great plains, the pronghorn antelope. They were the game which Daniel Boone followed during the closing decades of the seventeenth century, and David Crockett during the opening decades of the eighteenth; and now, at the outset of the twentieth century, it is probably not too much to say that ninety-nine out of every hundred head of game killed in the United States are deer, elk, or antelope. Indeed, the proportion is very much larger. In certain restricted localities black bear were at one time very numerous, and over large regions the multitudinous herds of the bison formed until 1883 the chief objects of pursuit. But the bison have now vanished; and though the black bear has held its own better than any other of the larger

carnivora, it is only very locally that it has ever been plentiful in the sense that even now the elk, deer, and antelope are still plentiful over considerable tracts of country. Taking the United States as a whole, the deer have always been by far the most numerous of all game; they have held their own in the land better than any other kinds; and they have been the most common quarry of the hunter.

The nomenclature and exact specific relationships of American deer and antelope offer difficulties not only to the hunter but to the naturalist. As regards the nomenclature, we share the trouble encountered by all peoples of European descent who have gone into strange lands. The incomers are almost invariably men who are not accustomed to scientific precision of expression. Like other people, they do not like to invent names if they can by any possibility make use of those already in existence, and so in a large number of cases they call the new birds and animals by names applied to entirely different birds and animals of the Old World to which, in the eyes of the settlers, they bear some resemblance. In South America the Spaniards, for instance, christened "lion" and "tiger" the great cats which are properly known as cougar and jaguar. In South Africa the Dutch settlers, who came from a land where all big game had long been

exterminated, gave fairly grotesque names to the great antelopes, calling them after the European elk, stag, and chamois. The French did but little better in Canada. Even in Ceylon the English, although belonging for the most part to the educated classes, did no better than the ordinary pioneer settlers, miscalling the sambur stag an elk, and the leopard a cheetah. Our own pioneers behaved in the same way. Hence it is that we have no distinctive name at all for the group of peculiarly American game birds of which the bob-white is the typical representative; and that, when we could not use the words quail, partridge, or pheasant, we went for our terminology to the barn-yard, and called our fine grouse, fool-hens, sage-hens, and prairie-chickens. The bear and wolf our people recognized at once. The bison they called a buffalo, which was no worse than the way in which every one in Europe called the Old World bison an aurochs. The American true elk and reindeer were rechristened moose and caribou — excellent names, by the way, derived from the Indian. The huge stag was called an elk. The extraordinary antelope of the high Western peaks was christened the white goat; not unnaturally, as it has a most goatlike look. The prongbuck of the plains, an animal standing as much alone among ruminants as does the giraffe, was simply called antelope. Even when we

invented names for ourselves, we applied them loosely. The ordinary deer is sometimes known as the red deer, sometimes as the Virginia deer, and sometimes as the whitetail deer, — the last being by far the best and most distinctive term.

In the present condition of zoological research it is not possible to state accurately how many "species" of deer there are in North America, both because mammalogists have not at hand a sufficient amount of material in the way of large series of specimens from different localities, and because they are not agreed among themselves as to the value of "species," or indeed as to exactly what is denoted by the term. Of course, if we had a complete series of specimens of extinct and fossil deer before us, there would be an absolutely perfect intergradation among all the existing forms through their long-vanished ancestral types; for the existing gaps have been created by the extinction and transformation of these former types. Where the gap is very broad and well marked no difficulty exists in using terms which shall express the difference. Thus the gap separating the moose, the caribou, and the wapiti from one another, and from the smaller American deer, is so wide, and there is so complete a lack of transitional forms, that the differences among them are expressed by naturalists by the use of different generic terms. The gap between the whitetail

and the different forms of blacktail, though much less, is also clearly marked. But when we come to consider the blacktail among themselves, we find two very distinct types which yet show a certain tendency to intergrade; and with the whitetail very wide differences exist, even in the United States, both individually among the deer of certain localities, and also as between all the deer of one locality when compared with all the deer of another. Our present knowledge of the various forms hardly justifies us in dogmatizing as to their exact relative worth, and even if our knowledge was more complete, naturalists are as yet wholly at variance as to the laws which should govern specific nomenclature. However, the hunter, the mere field naturalist, and the lover of outdoor life, are only secondarily interested in the niceness of these distinctions, and it is for them that this volume is written. Accordingly, I shall make no effort to determine the number of different but closely allied forms of smaller deer which are found in North Temperate America.

Disregarding the minor differences, there are in North America in addition to the so-called antelope, six wholly distinct kinds of deer: the moose, caribou, wapiti, whitetail, and the two blacktails.

The moose in its various forms reaches from the Atlantic to the Pacific, through the cold bo-

real forests of Canada, extending its range down into the United States in northern New England, Minnesota, and along the Rocky Mountains. It was exterminated from the Adirondacks in the early sixties, about the time that the wapiti was exterminated in Pennsylvania, or very shortly before. It is the brother of the Old World elk, and its huge size, shovel horns, short neck, swollen nose, and long legs distinguish it at a glance from any other animal.

The caribou is found throughout most of the moose's range, but it does not extend so far south, and in some of its forms reaches much farther north, being found on the cold barrens, from Newfoundland to the shores of the Arctic Sea. It is the only animal which is still at certain seasons found in enormous multitudes comparable to the vast herds of the bison in the old days, and in parts of its range it is being slaughtered in the same butcherly spirit that was responsible for the extinction of the bison. The different kinds of American caribou are closely akin to the reindeer of the Old World, and their long, irregularly branched antlers, with palmated ends, their big feet, coarse heads, and stout bodies, render them as easily distinguishable as the moose.

The wapiti or round-horned elk always had its centre of abundance in the United States, though in the West it was also found far north of the

Canadian line. This splendid deer affords a good instance of the difficulty of deciding what name to use in treating of our American game. On the one hand, it is entirely undesirable to be pedantic; and on the other hand, it seems a pity, at a time when speech is written almost as much as spoken, to use terms which perpetually require explanation in order to avoid confusion. The wapiti is not properly an elk at all; the term wapiti is unexceptionable, and it is greatly to be desired that it should be generally adopted. But unfortunately it has not been generally adopted. From the time when our backwoodsmen first began to hunt the animal among the foot-hills of the Appalachian chains to the present day, it has been universally known as elk wherever it has been found. In ordinary speech it is never known as anything else, and only an occasional settler or hunter would understand what the word wapiti referred to. The book name is a great deal better than the common name; but after all, it is only a book name. The case is almost exactly parallel to that of the buffalo, which was really a bison, but which lived as the buffalo, died as the buffalo, and left its name imprinted on our landscape as the buffalo. There is little use in trying to upset a name which is imprinted in our geography in hundreds of such titles as Elk Ridge, Elk Mountain, Elkhorn River. Yet in

the books it is often necessary to call it the wapiti in order to distinguish it both from its differently named close kinsfolk of the Old World, and from its more distant relatives with which it shares the name of elk. It is the largest of the true deer, and the noblest and stateliest of the deer kind throughout the world. It is closely akin to the much smaller European stag or red deer, and still more closely to certain Asiatic deer, one of which so closely approaches it in size, appearance, and stately presence as to be almost indistinguishable. Its huge and yet delicately moulded proportions, and its massive, rounded antlers, the beam of which bends backward from the head, while the tines are thrust forward, render it impossible to confound it with any other species of American deer. Owing to its habitat it has suffered from the persecution of hunters and settlers more than any other of its fellows in America, and the boundaries of its range have shrunk in far greater proportion. The moose and caribou have in most places greatly diminished in numbers, and have here and there been exterminated altogether from outlying portions of their range; but the wapiti has completely vanished from nine-tenths of the territory over which it roamed a century and a quarter ago. Although it was never found in any one place in such enormous numbers as the bison and the caribou, it never-

theless went in herds far larger than the herds of any other American game save the two mentioned, and was formerly very much more abundant within the area of its distribution than was the moose within the area of its distribution. It is now almost limited to certain mountainous areas in the Rockies and on the Pacific coast, — the Pacific coast form differing from the ordinary form.

The remaining three deer are much more closely connected with one another, all belonging to the same genus. The whitetail has always been, and is now, on the whole the commonest of American game, and it has held its own better than any other kind. It is found from southern Canada, in various forms, from the Atlantic to the Pacific, down into South America. It is given various names, and throughout most of its habitat is simply known as "deer"; but wherever it comes in contact with the blacktail it is almost invariably called whitetail. This is a very appropriate name, for its tail is habitually so carried as to be extremely conspicuous, being white and bushy, only the middle part above being dark colored. The antlers curve out and forward, the prongs branching from the posterior surface.

The Rocky Mountain blacktail or mule-deer is somewhat larger, with large ears, its tail short-haired and round, white excepting for a black tip, and with antlers which fork evenly like the prongs

of a pitchfork, — so that it is difficult to say which prong should be considered the main shaft, — and each prong itself bifurcates again. In the books this animal is called the mule-deer, but throughout its haunts it is almost always known simply as the blacktail. It is found in rough, broken country from the Bad Lands of the western Dakotas to the Pacific coast, and is everywhere the characteristic deer of the Rocky Mountains. The southern California form is peculiar, especially in having a dark stripe on the tail above.

The true blacktail is found on the Pacific coast from southern Alaska to northern California. Its horns are like those of the Rocky Mountain blacktail; its tail is more like that of the whitetail, but is not as large, and the white is much reduced, the color above and on the sides, to the very tip, being nearly black.

The so-called antelope is not an antelope at all, but a very extraordinary creature. It is the only hollow-horned ruminant which annually sheds its horns as do the deer. Its position in its class is as unique as that of the giraffe. It is sometimes called the prongbuck, but antelope is the name nearly universally used for it throughout its range. It extends from Canada to Mexico, through the great plains and the open plateaus of the Rocky Mountains; it was formerly found from the lower

Missouri and the Red River of the North to the Pacific coast in California; but it has been exterminated from the eastern and western borders of its former range, and very much thinned out everywhere.

In the game preserves and zoological gardens east of the Mississippi it has proved feasible to perpetuate the whitetail and the wapiti, which lend themselves readily to this semi-domestication. With mule-deer, caribou, moose, and prongbuck the task has been far more difficult, owing probably to the difficulty caused by an entire change of surroundings. Seemingly, however, the effort to keep moose on preserves in the Adirondacks and New Hampshire has been successful. There would be a far better chance to keep mule-deer and prongbuck permanently in captivity if the effort were made in their natural habitat.

The chase of all these noble and beautiful animals has ever possessed a peculiar fascination for bold and hardy men, skilled in the use of arms and the management of the horse, and wonted to feats of strength and endurance. Throughout the pioneer times the settlers followed hunting as an industry as much as a sport, and to this day there are regions in the Rockies and even on the great plains where the ranchmen still so follow it. Ordinarily the hunter goes on foot with the rifle, but where the country is open, as through-

out much of the West, there are still places where he habitually rides; and on the plains this is the universal habit. Moreover, the antelope is occasionally followed with greyhounds, and the whitetail deer with the ordinary track-hounds or deer-hounds. American hunters have never been partial to large-bore rifles, and against American game the heavy batteries necessary in India and Africa have never been found necessary, or indeed useful. Nowadays the small-bore, smokeless-powder rifle is almost universally used for all the different kinds of game described in this volume. For deer and antelope the lighter rifles are amply sufficient. For moose and wapiti the heavier kinds are preferable—not larger bores, but with a greater quantity of powder and a longer bullet. The hard, metal jacket of the bullet should of course not extend to the point; in other words, the nose should be of naked lead. Any good, modern rifle will meet the requirements. The particular make is largely a matter of personal taste. There are a dozen different kinds, each of which comes up to the standard of accuracy, flatness of trajectory, killing power, handiness, and endurance. The vital point is not the gun but the man behind the gun. Any one of these rifles is good enough, and the difference between any two of them is infinitesimal when compared with the importance of a good eye and a steady hand and nerves.

The matter of clothes is almost as much one of personal taste as is the choice of a rifle. The essential thing is that they should be of some kind of drab or neutral tint tending toward gray or brown. Personally, after many years' experience, I regard a buckskin shirt, when properly tanned, as the best possible outside garment for any but very rainy weather. Of course when the thermometer gets down toward zero, a warm, heavy jacket will be needed if one is on horseback. The buckskin shirt should be worn as a tunic, belted in at the waist. The hat should be soft, with not too wide a brim. The trousers should be loose and free to below the knee, and from there to the ankle should button tightly down the leg; the alternative being to use over them leather leggings which should have straps and buckles and not buttons. Not only the soles and heels of the shoes but under the insteps should be studded with nails.

To describe the necessary equipment is hardly worth while, because it differs so widely in different kinds of shooting. If a man lives on a ranch, or is passing some weeks in a lodge in a game country, and starts out for two or three days, he will often do well to carry nothing whatever but a blanket, a frying-pan, some salt pork, and some hardtack. If the hunting-ground is such that he can use a wagon or a canoe, and the trip is not

to be too long, he can carry about anything he chooses, including a tent, any amount of bedding, and if it is very cold, a small, portable stove, not to speak of elaborate cooking apparatus. If he goes with a pack-train, he will also be able to carry a good deal; but in such a case he must rely on the judgment of the trained packers, unless he is himself an expert in the diamond hitch. If it becomes necessary to go on foot for any length of time, he must be prepared to do genuine roughing, and must get along with the minimum of absolute necessities.

It is hardly necessary to point out that the hunter worthy of the name should be prepared to shift for himself in emergencies. A ranchman, or any other man whose business takes him much in the mountains and out on the great plains or among the forests, ought to be able to get along entirely on his own account. But this cannot usually be done by those whose existence is habitually more artificial. When a man who normally lives a rather over-civilized life, an over-luxurious life, — especially in the great cities — gets off for a few weeks' hunting, he cannot expect to accomplish much in the way of getting game without calling upon the services of a trained guide, woodsman, plainsman, or mountain man, whose life-work it has been to make himself an adept in all the craft of the wilderness.

Until a man, unused to wilderness life, even though a good sportsman, has actually tried it, he has no idea of the difficulties and hardships of shifting absolutely for himself, even for only two or three days. Not only will the local guide have the necessary knowledge as to precisely which one of two seemingly similar places is most apt to contain game; not only will he possess the skill in packing horses, or handling a canoe in rough water, or finding his way through the wilderness, which the amateur must lack; but even the things which the amateur does, the professional will do so much more easily and rapidly, as in the one case to leave, and in the other case not to leave, ample time for the hunting proper. Therefore the ordinary amateur sportsman, especially if he lives in a city, must count upon the services of trained men, possibly to help him in hunting, certainly to help him in travelling, cooking, pitching camp, and the like; and this he must do, if he expects to get good sport, no matter how hardy he may be, and no matter how just may be the pride he ought to take in his own craft, skill, and capacity to undergo fatigue and exposure. But while normally he must take advantage of the powers of others, he should certainly make a point of being able to shift for himself whenever the need arises; and he can only be sure of possessing this capacity by occasionally exercising it. It ought to be unneces-

sary to point out that the wilderness is not a place for those who are dependent upon luxuries, and above all for those who make a camping trip an excuse for debauchery. Neither the man who wants to take a French cook and champagne on a hunting trip, nor his equally objectionable though less wealthy brother who is chiefly concerned with filling and emptying a large whiskey jug, has any place whatever in the real life of the wilderness.

The most striking and melancholy feature in connection with American big game is the rapidity with which it has vanished. When, just before the outbreak of the Revolutionary War, the rifle-bearing hunters of the backwoods first penetrated the great forests west of the Alleghanies, deer, elk, black bear, and even buffalo swarmed in what are now the states of Kentucky and Tennessee; and the country north of the Ohio was a great and almost virgin hunting-ground. From that day to this the shrinkage has gone on, only partially checked here and there, and never arrested as a whole. As a matter of historical accuracy, however, it is well to bear in mind that a great many writers in lamenting this extinction of the game have, from time to time, anticipated or overstated the facts. Thus as good an author as Colonel Richard Irving Dodge spoke of the buffalo as practically extinct, while the great northern herd still

existed in countless thousands. As early as 1880 very good sporting authorities spoke not only of the buffalo but of the elk, deer, and antelope as no longer to be found in plenty; and within a year one of the greatest of living hunters has stated that it is no longer possible to find any American wapiti bearing heads comparable with the red deer of Hungary. As a matter of fact, in the early eighties there were still great regions where every species of game that had ever been known within historic times on our continent were still to be found as plentifully as ever. In the early nineties there were still large regions in which this was true of all game except the buffalo; for instance, it was true of the elk in portions of northwestern Wyoming, of the blacktail in northwestern Colorado, of the whitetail here and there in the Indian Territory, and of the antelope in parts of New Mexico. Even at the present day there are smaller, but still considerable regions where these four animals are yet found in great abundance, and I have seen antlers of wapiti shot in 1900 far surpassing any of which there is record from Hungary. In New England and New York, as well as New Brunswick and Nova Scotia, the whitetail deer is more plentiful than it was thirty years ago, and in Maine (and to an even greater extent in New Brunswick) the moose and caribou have, on the whole, increased during the same period.

There is yet ample opportunity for the big game hunter in the United States and Canada; while not even in the old days was it possible to go on any trip better worth taking than the recent successful hunt of Mr. Dall DeWeese, of Canon City, Colorado, after the giant moose, giant bear, white sheep, and caribou of Alaska.

While it is necessary to give this word of warning to those who, in praising time past, always forget the opportunities of the present, it is a thousand fold more necessary to remember that these opportunities are, nevertheless, vanishing; and if we are a sensible people, we will make it our business to see that the process of extinction is arrested. At the present moment the great herds of caribou are being butchered as in the past the great herds of bison and wapiti have been butchered. Every believer in manliness, and therefore in manly sport, and every lover of nature, every man who appreciates the majesty and beauty of the wilderness and of wild life, should strike hands with the far-sighted men who wish to preserve our material resources, in the effort to keep our forests and our game beasts, game birds, and game fish — indeed all the living creatures of prairie, and woodland, and seashore — from wanton destruction.

Above all, we should realize that the effort toward this end is essentially a democratic move-

ment. It is entirely in our power as a nation to preserve large tracts of wilderness, which are valueless for agricultural purposes, as play-grounds for rich and poor alike, and to preserve the game so that it shall continue to exist for the benefit of all lovers of nature, and to give reasonable opportunities for the exercise of the skill of the hunter, whether he is or is not a man of means. But this end can only be achieved by wise laws and by a resolute enforcement of the laws. Lack of such legislation and administration will result in harm to all of us, but most of all in harm to the nature lover who does not possess vast wealth. Already there have sprung up here and there through the country, as in New Hampshire and the Adirondacks, large private preserves. These preserves often serve a most useful purpose, and should be encouraged within reasonable limits; but it would be a great misfortune if they increased beyond a certain extent, or if they took the place of great tracts of wild land, which continue as such, either because of their very nature, or because of the protection of the state exerted in the form of making them state or national parks or reserves. It is utterly foolish to regard proper game laws as undemocratic, unrepublican. On the contrary, they are essentially in the interests of the people as a whole, because it is only through their enactment and enforcement that the people as a whole

can preserve the game and can prevent its becoming purely the property of the rich, who are able to create and maintain extensive private preserves. The very wealthy man can get hunting anyhow, but the man of small means is dependent solely upon wise and well-executed game laws for his enjoyment of the sturdy pleasure of the chase. In Maine, in Vermont, in the Adirondacks, even in parts of Massachusetts and on Long Island too, people have waked up to this fact, particularly so far as the common whitetail deer is concerned, and in Maine also as regards the moose and caribou. The effect is shown in the increase in all these animals. Such game protection results, in the first place, in securing to the people who live in the neighborhood permanent opportunities for hunting; and in the next place, it provides no small source of wealth to the locality because of the visitors which it attracts. A deer wild in the woods is worth to the people of the neighborhood many times the value of its carcass, because of the way it attracts sportsmen, who give employment and leave money behind them.

True sportsmen, worthy of the name, men who shoot only in season and in moderation, do no harm whatever to game. The most objectionable of all game destroyers is, of course, the kind of game butcher who simply kills for the sake

of the record of slaughter, who leaves deer and ducks and prairie-chicken to rot after he has slain them. Such a man is wholly obnoxious; and indeed, so is any man who shoots for the purpose of establishing a record of the amount of game killed. To my mind this is one very unfortunate feature of what is otherwise the admirably sportsmanlike English spirit in these matters. The custom of shooting great bags of deer, grouse, partridges, and pheasants, the keen rivalry in making such bags, and their publication in sporting journals, are symptoms of a spirit which is most unhealthy from every standpoint. It is to be earnestly hoped that every American hunting or fishing club will strive to inculcate among its own members, and in the minds of the general public, that anything like an excessive bag, any destruction for the sake of making a record, is to be severely reprobated.

But after all, this kind of perverted sportsman, unworthy though he is, is not the chief factor in the destruction of our game. The professional skin or market hunter, is the real offender. Yet he is of all others the man who would ultimately be most benefited by the preservation of the game. The frontier settler, in a thoroughly wild country, is certain to kill game for his own use. As long as he does no more than this, it is hard to blame him; although if he is awake to his

own interests he will soon realize that to him, too, the live deer is worth far more than the dead deer, because of the way in which it brings money into the wilderness. The professional hunter who kills game for the hide, or for the meat, or to sell antlers and other trophies, and the rich people, who are content to buy what they have not the skill to get by their own exertions — these are the men who are the real enemies of game. Where there is no law which checks the market hunters, the inevitable result of their butchery is that the game is completely destroyed, and with it their own means of livelihood. If, on the other hand, they were willing to preserve it, they could make much more money by acting as guides. In northwestern Colorado, at the present moment, there are still blacktail deer in abundance, and some hundreds of elk are left. Colorado has fairly good game laws, but they are indifferently enforced. The country in which the game is found can probably never support any but a very sparse population, and a large portion of the summer range is practically useless for settlement. If the people of Colorado generally, and above all the people of the counties in which the game is located, would resolutely cooperate with those of their own number who are already alive to the importance of preserving the game, it could, without difficulty, be kept always

as abundant as it now is, and this beautiful region would be a permanent health resort and play-ground for the people of a large part of the Union. Such action would be a benefit to every one, but it would be a benefit most of all to the people of the immediate locality.

In northwestern Wyoming the preservation of the Yellowstone Park by the Federal government has done inestimable good. It preserves the great nursery and breeding-ground of the elk. The reserve should, however, be extended so as to include more of the elk's winter range.

It is to be remembered that the preservation of the game is by no means merely the affair of the sportsman. Most of us, as we grow older, grow to care relatively less for the sport itself than for the splendid freedom and abounding health of outdoor life in the woods, on the plains, and among the great mountains; and to the true nature lover it is melancholy to see the wilderness stripped of the wild creatures which gave it no small part of its peculiar charm. It is inevitable, and probably necessary, that the wolf and the cougar should go; but the blacktail and wapiti grouped on the mountain side, the whitetail and moose feeding in the sedgy ponds, — these add beyond measure to the wilderness landscape, and if they are taken away, they leave a lack which nothing else can quite make good. So it is of those true birds of

the wilderness, the eagle and the raven; and indeed of all the wild things furred, feathered, and finned.

There are many sides to the charm of big game hunting; nor should it be regarded as being without its solid advantages from the standpoint of national character. Always in our modern life, the life of a highly complex industrialism, there is a tendency to softening of the fibre. This is true of our enjoyments; and it is no less true of very many of our business occupations. It is not true of such work as railroading, a purely modern development, nor yet of work like that of those who man the fishing fleets; but it is preëminently true of all occupations which cause men to lead sedentary lives in great cities. For these men it is especially necessary to provide hard and rough play. Of course, if such play is made a serious business, the result is very bad; but this does not in the least affect the fact that within proper limits the play itself is good. Vigorous athletic sports carried on in a sane spirit are healthy. The hardy out-of-door sports of the wilderness are even healthier. It is a mere truism to say that the qualities developed by the hunter are the qualities needed by the soldier; and a curious feature of the changed conditions of modern warfare is that they call to a much greater extent than during the two or three centuries immediately past, for

the very qualities of individual initiative, ability to live and work in the open, and personal skill in the management of horse and weapons, which are fostered by a hunter's life. No training in the barracks or on the parade-ground is as good as the training given by a hard hunting trip in which a man really does the work for himself, learns to face emergencies, to study country, to perform feats of hardihood, to face exposure and undergo severe labor. It is an excellent thing for any man to be a good horseman and a good marksman, to be able to live in the open and to feel a self-reliant readiness in any crisis. Big game hunting tends to produce or develop exactly these physical and moral traits. To say that it may be pursued in a manner or to an extent which is demoralizing is but to say what can likewise be said of all other pastimes and of almost all kinds of serious business. That it can be abused either in the way in which it is done, or the extent to which it is carried, does not alter the fact that it is in itself a sane and healthy recreation.

At the risk of over-emphasis, I desire to repeat that we cannot too sedulously insist upon the fact that the big game hunter should not be a game butcher. To protest against all hunting is, of course, merely a bit of unhealthy sentimentality. If no wild animals were killed by man for food or sport, he would speedily have to kill them in

self-defence because they would eat him out of house and home. But the true sportsman is never wanton in slaughter. If he is worthy the name, he will feel infinitely more satisfaction in a single successful shot which comes to crown the triumph of his hardihood and address in exploring the wilds, and in the actual stalk, than he would in any amount of shooting at creatures driven past him from artificially stocked covers. The best test of the worth of any sport is the demand that sport makes upon those qualities of mind and body which in their sum we call manliness.

Moreover, in addition to being a true sportsman and not a game butcher, in addition to being a humane man as well as keen-eyed, strong-limbed, and stout-hearted, the big game hunter should be a field naturalist. If possible, he should be an adept with the camera; and hunting with the camera will tax his skill far more than hunting with the rifle, while the results in the long run give much greater satisfaction. Wherever possible he should keep a note-book, and should carefully study and record the habits of the wild creatures, especially when in some remote regions to which trained scientific observers but rarely have access. If we could only produce a hunter who would do for American big game what John Burroughs has done for the smaller wild life of hedgerow and

orchard, farm and garden and grove, we should indeed be fortunate. Yet even though a man does not possess the literary faculty and the powers of trained observation necessary for such a task, he can do his part toward adding to our information by keeping careful notes of all the important facts which he comes across. Such note-books would show the changed habits of game with the changed seasons, their abundance at different times and different places, the melancholy data of their disappearance, the pleasanter facts as to their change of habits which enable them to continue to exist in the land, and, in short, all their traits. A real and lasting service would thereby be rendered, not only to naturalists, but to all who care for nature.

CHAPTER II

THE MULE-DEER, OR ROCKY MOUNTAIN BLACKTAIL

THIS is the largest and finest of our three smaller deer. Throughout its range it is known as the blacktail deer, and it has as good a historic claim to the title as its Pacific coast kinsman, the coast or true blacktail. If one were writing purely of this species, it would be pedantry to call it by its book name of mule-deer, a name which conveys little or no meaning to the people who live in its haunts and who hunt it; but it is certainly very confusing to know two distinct types of deer by one name, and as both the Rocky Mountain blacktail and Coast blacktail are treated in this volume, and as the former is occasionally known as mule-deer, I shall, for convenience' sake, speak of it under this name, — a name given it because of its great ears, which rather detract from its otherwise very handsome appearance.

The mule-deer is a striking and beautiful animal. As is the case with our other species, it varies greatly in size, but is on the average heavier than either the whitetail or the true blacktail. The

horns also average longer and heavier, and in exceptional heads are really noteworthy trophies. Ordinarily a full-grown buck has a head of ten distinct and well-developed points, eight of which consist of the bifurcations of the two main prongs into which each antler divides, while in addition there are two shorter basal or frontal points. But the latter are very irregular, being sometimes missing; while sometimes there are two or three of them on each antler. When missing it usually means that the antlers are of young animals that have not attained their full growth. A yearling will sometimes have merely a pair of spikes, and sometimes each spike will be bifurcated so as to make two points. A two-year-old may develop antlers which, though small, possess the normal four points. Occasionally, where unusually big heads are developed, there are a number of extra points. If these are due to deformity, they simply take away from the beauty of the head; but where they are symmetrical, while at the same time the antlers are massive, they add greatly to the beauty. All the handsomest and largest heads show this symmetrical development of extra points. It is rather hard to lay down a hard-and-fast rule for counting them. The largest and finest antlers are usually rough, and it is not easy to say when a particular point in roughness has developed so that it may legitimately be called a prong. The

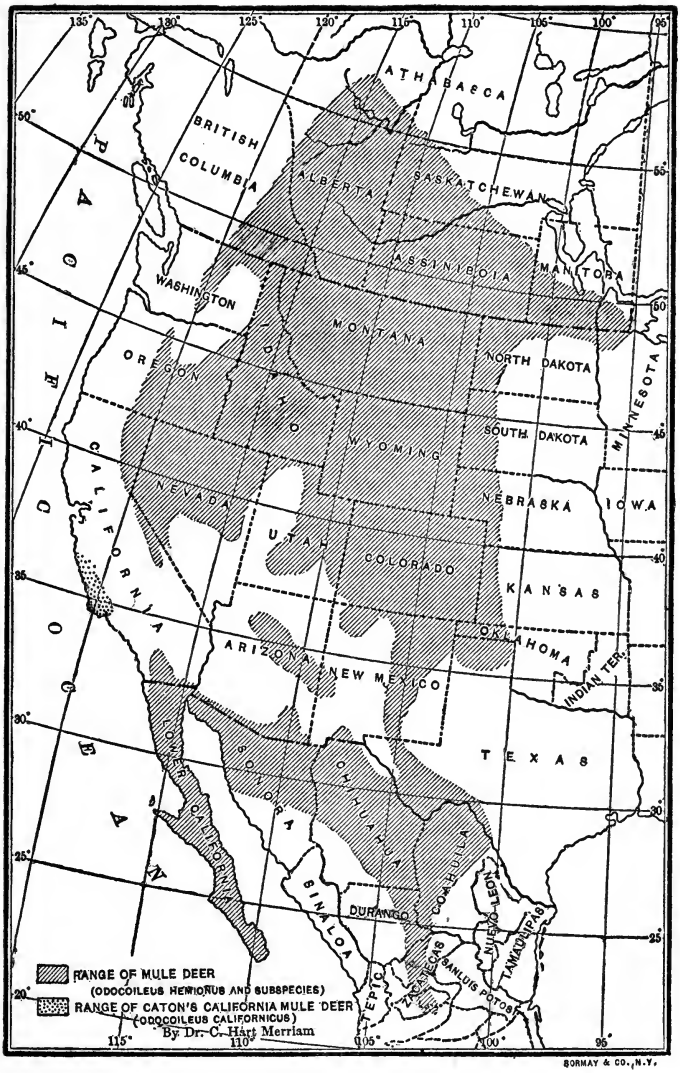
largest head I ever got to my own rifle had twenty-eight points, symmetrically arranged, the antlers being rough and very massive as well as very long. The buck was an immense fellow, but no bigger than other bucks I have shot which possessed ordinary heads.

The mule-deer is found from the rough country which begins along the eastern edges of the great plains, across the Rocky Mountains to the eastern slopes of the coast ranges, and into southern California. It extends into Canada on the north and Mexico on the south. On the west it touches, and here and there crosses, the boundaries of the Coast blacktail. The whitetail is found in places throughout its habitat from east to west and from north to south. But there are great regions in this territory which are peculiarly fitted for the mule-deer, but in which the whitetail is never found, as the habits of the two are entirely different. In the mountains of western Colorado and Wyoming, for instance, the mule-deer swarms, but the whole region is unfit for the whitetail, which is accordingly only found in a very few narrowly restricted localities.

The mule-deer does not hold its own as well as the whitetail in the presence of man, but it is by no means as quickly exterminated as the wapiti. The general limits of its range have not shrunk materially in the century during which it has

been known to white hunters. It was never found until the fertile, moist country of the Mississippi Valley was passed and the dry plains region to the west of it reached, and it still exists in some numbers here and there in this country, as, for instance, in the Bad Lands along the Little Missouri, and in the Black Hills. But although its limits of distribution have not very sensibly diminished, there are large portions of the range within these limits from which it has practically vanished, and in most places its numbers have been wofully thinned. It holds its own best among the more inaccessible mountain masses of the Rockies, and from Chihuahua to Alberta there are tracts where it is still very abundant. Yet even in these places the numbers are diminishing, and this process can be arrested only by better laws, and above all, by a better administration of the law. The national government could do much by establishing its forest reserves as game reserves, and putting on a sufficient number of forest rangers who should be empowered to prevent all hunting on the reserves. The state governments can do still more. Colorado has good laws, but they are not well enforced. The easy method of accounting for this fact is to say that it is due to the politicians; but in reality the politicians merely represent the wishes, or more commonly the indifference, of the people.

As long as the good citizens of a state are indifferent as to game protection, or take but a tepid interest in it, the politicians, through their agents, will leave the game laws unenforced. But if the people of Colorado, Wyoming, and Montana come to feel the genuine interest in the enforcement of these laws that the people of Maine and Vermont have grown to take during the past twenty years, not only will the mule-deer cease to diminish, but it will positively increase. It is a mistake to suppose that such a change would only be to the advantage of well-to-do sportsmen. Men who are interested in hunting for hunting's sake, men who come from the great cities remote from the mountains in order to get three or four weeks' healthy, manly holiday, would undoubtedly be benefited; but the greatest benefit would be to the people of the localities, and of the neighborhoods round about. The presence of the game would attract outsiders who would leave in the country money or its equivalent, which would many times surpass in value the game they actually killed; and furthermore, the preservation of the game would mean that the ranchmen and grangers who live near its haunts would have in perpetuity the chance of following the pleasantest and healthiest of all out-of-door pastimes; whereas, if through their shortsightedness they destroy, or permit to be destroyed, the game, they


ATHABASCA
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
ASSINIBOIA
MANITOBA
WASHINGTON
MONTANA
NORTH DAKOTA
OREGON
IDAHO
WYOMING
SOUTH DAKOTA
MINNESOTA
NEVADA
CALIFORNIA
UTAH
COLORADO
NEBRASKA
IOWA
KANSAS
OKLAHOMA
INDIAN TER.
ARIZONA
NEW MEXICO
TEXAS
LOWER CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
NUEVO LEON
TAMAULIPAS
SINALOA
DURANGO
ZACATECAS
SAN LUIS POTOSI
PACIFIC OCEAN
GULF OF MEXICO
RANGE OF MULE DEER
(ODOCOILEUS HEMIONUS AND SUBSPECIES)
RANGE OF CATON'S CALIFORNIA MULE DEER
(ODOCOILEUS CALIFORNICUS)
By Dr. C. Hart Merriam
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are themselves responsible for the fact that their children and children's children find themselves forever debarred from a pursuit which must under such circumstances become the amusement only of the very rich. If we are really alive to our opportunities under our democratic, social, and political system, we can keep for ourselves — and by "ourselves" I mean the enormous bulk of men whose means range from moderate to very small — ample opportunity for the enjoyment of hunting and shooting, of vigorous and blood-stirring out-of-doors sport. If we fail to take advantage of our possibilities, if we fail to pass, in the interest of all, wise game laws, and to see that these game laws are properly enforced, we will then have to thank ourselves if in the future the game is only found in the game preserves of the wealthy; and under such circumstances only these same wealthy people will have the chance to hunt it.

The mule-deer differs widely from the whitetail in its habits, and especially in its gait, and in the kind of country which it frequents. Although in many parts of its range it is found side by side with its whitetail cousin, the two do not actually associate together, and their propinquity is due simply to the fact, that the river bottoms being a favorite haunt of the whitetail, long tongues of the distribution area of this species are thrust into the

domain of its bolder, less stealthy and less crafty kinsman. Throughout the plains country the whitetail is the deer of the river bottoms, where the rank growth gives it secure hiding-places, as well as ample food. The mule-deer, on the contrary, never comes down into the dense growths of the river bottoms. Throughout the plains country it is the deer of the broken Bad Lands which fringe these river bottoms on either side, and of the rough ravines which wind their way through the Bad Lands to the edge of the prairie country which lies back of them. The broken hills, their gorges filled with patches of ash, buck brush, cedar, and dwarf pine, form a country in which the mule-deer revels. The whitetail will, at times, wander far out on the prairies where the grass is tall and rank; but it is not nearly so bold or fond of the open as the mule-deer. The latter is frequently found in hilly country where the covering is so scanty that the animal must be perpetually on the watch, as if it were a bighorn or prongbuck, in order to spy its foes at a distance and escape before they can come near; whereas the whitetail usually seeks to elude observation by hiding — by its crouching, stealthy habits.

It must be remembered, however, that with the mule-deer, as with all other species of animals, there is a wide variability in habits under different conditions. This is often forgotten even by

trained naturalists, who accept the observations made in one locality as if they applied throughout the range of the species. Thus in the excellent account of the habits of this species in Mr. Lydeker's book on the "Deer of All Lands" it is asserted that mule-deer never dwell permanently in the forest, and feed almost exclusively on grass. The first statement is entirely, and the second mainly, true of the mule-deer of the plains from the Little Missouri westward to the headwaters of the Platte, the Yellowstone, and the Big Horn; but there are large parts of the Rockies in which neither statement applies at all. In the course of several hunting trips among the densely wooded mountains of western Montana, along the watershed separating the streams that flow into Clarke's Fork of the Columbia from those that ultimately empty into Kootenay Lake, I found the mule-deer plentiful in many places where practically the whole country was covered by dense forest, and where the opportunities for grazing were small indeed, as we found to our cost in connection with our pack-train. In this region the mule-deer lived the entire time among the timber, and subsisted for the most part on browse. Occasionally they would find an open glade and graze; but the stomachs of those killed contained not grass, but blueberries and the leaves and delicate tips of bushes. I was not in this country in win-

ter, but it was perfectly evident that even at that season the deer must spend their time in the thick timber. There was no chance for them to go above the timber line, because the mountains were densely wooded to their summits, and the white goats of the locality also lived in the timber. It was far harder to get the mule-deer than it was to get the white goats, for the latter were infinitely more conspicuous, were slower in their movements, and bolder and less shy. Almost the only way we succeeded in killing the deer was by finding one of their well-trodden paths and lying in wait beside it very early in the morning or quite late in the afternoon. The season was August and September, and the deer were astir long before sunset. They usually, but not always, lay high up on the mountain sides, and while they sometimes wandered to and fro browsing on the mountains, they often came down to feed in the valleys, where the berries were thicker. Their paths were well beaten, although, like all game trails, after being as plainly marked as a pony track for a quarter of a mile or so, they would suddenly grow faint and vanish. The paths ran nearly straight up and down hill, and even when entirely undisturbed, the deer often came down them at a great rate, bouncing along in a way that showed that they have no fear of developing the sprung knees which we should fear for

a domestic animal which habitually tried the same experiment.

In other habits also the deer vary widely in different localities. For instance, there is an absolute contrast as regards their migratory habits between the mule-deer, which live in the Bad Lands along the Little Missouri, and those which live in northwestern Colorado; and this difference is characteristic generally of the deer which in the summer dwell in the high mountains, as contrasted with those which bear and rear their young in the low, broken, hill-country. Along the Little Missouri there was no regular or clearly defined migration of the mule-deer in a mass. Some individual, or groups of individuals, shifted their quarters for a few miles, so that in the spring, for instance, a particular district of a few square miles, in which they had been abundant before, might be wholly without them. But there were other districts which happened to afford at all times sufficient food and shelter, in which they were to be found the year round; and the animals did not band and migrate as the prongbucks did in the same region. In the immediate neighborhood of my ranch there were groups of high hills containing springs of water, good grass, and an abundance of cedar, ash, and all kinds of brush in which mule-deer were permanent residents. There were big dry creeks,

with well-wooded bottoms, lying among rugged hills, in which I have found whitetail and mule-deer literally within a stone's throw of one another. I once started from two adjoining pockets in this particular creek two does, each with a fawn, one being a mule-deer and the other a whitetail. On another occasion, on an early spring afternoon, just before the fawns were born, I came upon a herd of twenty whitetails, does, and young of the preceding year, grazing greedily on the young grass; and half a mile up the creek, in an almost exactly similar locality, I came upon just such a herd of mule-deer. In each case the animals were so absorbed in the feasting, which was to make up for their winter privations, that I was able to stalk to within fifty yards, though of course I did not shoot.

In northwestern Colorado the conditions are entirely different. Throughout the region there is not a single whitetail to be found, and never has been, although in the winter range of the mule-deer there are a few prongbuck; and the wapiti once abounded. The mule-deer are still plentiful. They make a complete migration summer and winter, so that in neither season is a single individual to be found in the haunts they frequent during the other season. In the summer they live and bring forth their young high up in the main chain of the mountains, in a

beautiful country of northern forest growth, dotted with trout-filled brooks and clear lakes. The snowfall is so deep in these wooded mountains that the deer would run great risk of perishing if they stayed therein, and indeed, could only winter there at all in very small numbers. Accordingly, when the storms begin in the fall, usually about the first of October, just before the rut, the deer assemble in bands and move west and south to the lower, drier country, where the rugged hills are here and there clothed with an open growth of pinyon and cedar, instead of the tall spruces and pines of the summer range. The migrating bands follow one another along definite trails over mountains, through passes and valleys, and across streams; and their winter range swarms with them a few days after the forerunners have put in their appearance in what has been, during the summer, an absolutely deerless country.

In January and February, 1901, I spent five weeks north of the White River, in northwestern Colorado. It was in the heart of the wintering ground of the great Colorado mule-deer herd. Forty miles away to the east, extending north, lay the high mountains in which these deer had spent the summer. The winter range, in which I was at the time hunting cougars, is a region of comparatively light snowfall, though the cold is

very bitter. On several occasions during my stay the thermometer went down to twenty degrees below zero. The hills, or low mountains, for it was difficult to know which to call them, were steep and broken, and separated by narrow flats covered with sage brush. The ordinary trees were the pinyon and cedar, which were scattered in rather open groves over the mountain sides and the spurs between the ravines. There were also patches of quaking asp, scrub oak, and brush. The entire country was thinly covered with ranches, and there were huge pastures enclosed by wire fences. I have never seen the mule-deer so numerous anywhere as they were in this country at this time; although in 1883, on the Little Missouri, they were almost as plentiful. There was not a day we did not see scores, and on some days we saw hundreds. Frequently they were found in small parties of two or three, or a dozen individuals, but on occasions we saw bands of thirty or forty. Only rarely were they found singly. The fawns were of course well grown, being eight or nine months old. They were still accompanying their mothers. Ordinarily a herd would consist of does, fawns, and yearlings, the latter carrying their first antlers. But it was not possible to lay down a universal rule. Again and again I saw herds in which there were one or two full-grown bucks

associating with the females and younger deer. At other times we came across small bands of full-grown bucks by themselves; and occasionally a solitary buck. Considering the extent to which these deer must have been persecuted, I did not think them shy. We were hunting on horseback, and had hounds with us, so we made no especial attempt to avoid noise. Yet very frequently we would come close on the deer before they took alarm; and even when alarmed they would sometimes trot slowly off, halting and looking back. On one occasion, in some bad lands, we came upon four bucks which had been sunning themselves on the face of a clay wall. They jumped up and went off one at a time, very slowly, passing diagonally by us, certainly not over seventy yards off. All four could have been shot without effort, and as they had fine antlers I should certainly have killed one, had it been the open season.

When we came on these Colorado mule-deer suddenly, they generally behaved exactly as their brethren used to in the old days on the Little Missouri; that is, they would run off at a good speed for a hundred yards or so, then slow up, halt, gaze inquisitively at us for some seconds, and again take to flight. While the sun was strong they liked to lie out in the low brush on slopes where they would get the full benefit of

the heat. During the heavy snowstorms they usually retreated into some ravine where the trees grew thicker than usual, not stirring until the weight of the storm was over. Most of the night, especially if it was moonlight, they fed; but they were not at all regular about this. I frequently saw them standing up and grazing, or more rarely browsing, in the middle of the day, and in the late afternoon they often came down to graze on the flats within view of the different ranch houses where I happened to stop. The hours for feeding and resting, however, always vary accordingly as the deer are or are not persecuted. In wild localities I have again and again found these deer grazing at all hours of the day, and coming to water at high noon; whereas, where they have been much persecuted, they only begin to feed after dusk, and come to water after dark. Of course during this winter weather they could get no water, snow supplying its place.

I was immensely interested with the way they got through the wire fences. A mule-deer is a great jumper; I have known them to clear with ease high timber corral fences surrounding hayricks. If the animals had chosen, they could have jumped any of the wire fences I saw; yet never in a single instance did I see one of them so jump a fence, nor did I ever find in the tell-tale snow tracks which indicated their having done so.

They paid no heed whatever to the fences, so far as I could see, and went through them at will; but they always got between the wires, or went under the lowest wire. The dexterity with which they did this was extraordinary. When alarmed they would run full speed toward a wire fence, would pass through it, often hardly altering their stride, and never making any marks in the snow which looked as though they had crawled. Twice I saw bands thus go through a wire fence, once at speed, the other time when they were not alarmed. On both occasions they were too far off to allow me to see exactly their mode of procedure, but on examining the snow where they had passed, there was not the slightest mark of their bodies, and the alteration in their gait, as shown by the footprints, was hardly perceptible. In one instance, however, where I scared a young buck which ran over a hill and through a wire fence on the other side, I found one of his antlers lying beside the fence, it having evidently been knocked off by the wire. Their antlers were getting very loose, and toward the end of our stay they had begun to shed them.

The deer were preyed on by many foes. Sportsmen and hide hunters had been busy during the fall migrations, and the ranchmen of the neighborhood were shooting them occasionally for food, even when we were out there. The cougars at

this season were preying upon them practically to the exclusion of everything else. We came upon one large fawn which had been killed by a bobcat. The gray wolves were also preying upon them. A party of these wolves can sometimes run down even an unwounded blacktail; I have myself known of their performing this feat. Twice on this very hunt we came across the carcasses of blacktail which had thus been killed by wolves, and one of the cowpunchers at a ranch where we were staying came in and reported to us that while riding among the cattle that afternoon he had seen two coyotes run a young mule-deer to a standstill, and they would without doubt have killed it had they not been frightened by his approach. Still the wolf is very much less successful than the cougar in killing these deer, and even the cougar continually fails in his stalks. But the deer were so plentiful that at this time all the cougars we killed were very fat, and evidently had no difficulty in getting as much venison as they needed. The wolves were not as well off, and now and then made forays on the young stock of the ranchmen, which at this season the cougar let alone, reserving his attention to them for the summer season when the deer has vanished.

In the Big Horn Mountains, where I also saw a good deal of the mule-deer, their habits were intermediate between those of the species that

dwell on the plains and those that dwell in the densely timbered regions of the Rockies further to the northwest. In the summer time they lived high up on the plateaus of the Big Horn, sometimes feeding in the open glades and sometimes in the pine forests. In the fall they browsed on certain of the bushes almost exclusively. In winter they came down into the low country. South of the Yellowstone Park, where the wapiti swarmed, the mule-deer were not numerous. I believe that by choice they prefer rugged, open country, and they certainly care comparatively little for bad weather, as they will often visit bleak, wind-swept ridges in midwinter, as being places where they can best get food at that season, when the snow lies deep in the sheltered places. Nevertheless, many of the species pass their whole life in thick timber.

My chief opportunities for observing the mule-deer were in the eighties, when I spent much of my time on my ranch on the Little Missouri. Mule-deer were then very plentiful, and I killed more of them than of all other game put together. At that time in the cattle country no ranchman ever thought of killing beef, and if we had fresh meat at all it was ordinarily venison. In the fall we usually tried to kill enough deer to last out the winter. Until the settlers came in, the Little Missouri country was an ideal range for

mule-deer, and they fairly swarmed; while elk were also plentiful, and the restless herds of the buffalo surged at intervals through the land. After 1882 and 1883 the buffalo and elk were killed out, the former completely, and the latter practically, and the skin hunters, and then the ranchers, turned their attention chiefly to the mule-deer. It lived in open country where there was cover for the stalker, and so it was much easier to kill than either the whitetail, which was found in the dense cover of the river bottoms, or the prongbuck, which was found far back from the river, on the flat prairies where there was no cover at all. I have been informed of other localities in which the antelope has disappeared long before the mule-deer, and I believe that in the Rockies the mule-deer has a far better chance of survival than the antelope has on the plains; but on the Little Missouri the antelope continued plentiful long after the mule-deer had become decidedly scarce. In 1886 I think the antelope were fully as abundant as ever they were, while the mule-deer had wofully diminished. In the early nineties there were still regions within thirty or forty miles of my ranch, where the antelope were very plentiful — far more so than the mule-deer were at that time. Now they are both scarce along the Little Missouri, and which will outlast the other I cannot say.

In the old days, as I have already said, it was by no means infrequent to see both the whitetail and the mule-deer close together, and when, under such circumstances, they were alarmed, one got a peculiarly clear idea of the extraordinary gait which is the mule-deer's most striking characteristic. It trots wells, gallops if hard pressed, and is a good climber, though much inferior to the mountain sheep. But its normal gait consists of a series of stiff-legged bounds, all four feet leaving and striking the ground at the same time. This gait differs more from the gait of bighorn, prongbuck, whitetail, and wapiti than the gaits of these latter animals differ among themselves. The wapiti, for instance, rarely gallops, but when he does, it is a gallop of the ordinary type. The prongbuck runs with a singularly even gait; whereas the whitetail makes great bounds, some much higher than others. But fundamentally in all cases the action is the same, and has no resemblance to the stiff-legged buck jumping which is the ordinary means of progression of the mule-deer. These jumps carry it not only on the level, but up and down hill at a great speed. It is said to be a tiresome gait for the animal, if hunted for any length of time on the level; but of this I cannot speak with full knowledge.

Compared to the wapiti, the mule-deer, like our other small deer, is a very silent animal. For

a long time I believed it uttered no sound beyond the snort of alarm and the rare bleat of the doe to her fawn; but one afternoon I heard two bucks grunting or barking at one another in a ravine back of the ranch-house, and crept up and shot them. I was still uncertain whether this was an indication of a regular habit; but a couple of years later, on a moonlight night just after sunset, I heard a big buck travelling down a ravine and continually barking, evidently as a love challenge. I have been informed by some hunters that the bucks at the time of the rut not infrequently thus grunt and bark; but most hunters are ignorant of this habit; and it is certainly not a common practice.

The species is not nearly as gregarious as the wapiti or caribou. During the winter the bucks are generally found singly, or in small parties by themselves, although occasionally one will associate with a party of does and of young deer. When in May or June — for the exact time varies with the locality — the doe brings forth her young, she retires to some lonely thicket. Sometimes one and sometimes two fawns are brought forth. They lie very close for the first few days. I have picked them up and handled them without their making the slightest effort to escape, while the mother hung about a few hundred yards off. On one occasion I by accident surprised a doe in the very

act of giving birth to two fawns. One had just been born and the other was born as the doe made her first leap away. She ran off with as much speed and unconcern as if nothing whatever had happened. I passed on immediately, lest she should be so frightened as not to come back to the fawns. It has happened that where I have found the newly born fawns I have invariably found the doe to be entirely alone, but her young of the previous year must sometimes at least be in the neighborhood, for a little later I have frequently seen the doe and her fawn or fawns, and either one or two young of the previous year, together. Often, however, these young deer will themselves be alone, or associated with an older doe which is barren. The bucks at the same time go to secluded places; sometimes singly, while sometimes an old buck will be accompanied by a younger one, or a couple of old bucks will lie together. They move about as little as possible while their horns are growing, and if a hunter comes by, they will lie far closer than at any other time of the year, squatting in the dense thickets as if they were whitetails.

When in the Bad Lands of the western Dakotas the late September breezes grow cold, then the bucks, their horns already clean of velvet which they have thrashed off on the bushes and saplings, feel their necks begin to swell; and

early in October — sometimes not until November — they seek the does. The latter, especially the younger ones, at first flee in frantic haste. As the rut goes on the bucks become ever bolder and more ardent. Not only do they chase the does by night but also by day. I have sat on the side of a ravine in the Bad Lands at noon and seen a young doe race past me as if followed by a wolf. When she was out of sight a big buck appeared on her trail, following it by scent, also at speed. When he had passed I got up, and the motion frightened a younger buck which was following two or three hundred yards in the rear of the big one. After a while the doe yields, and the buck then accompanies her. If, however, it is early in the season, he may leave her entirely in order to run after another doe. Later in the season he will have a better chance of adding the second doe to his harem, or of robbing another buck of the doe or does which he has accumulated. I have often seen merely one doe and one buck together, and I have often seen a single doe which for several days was accompanied by several bucks, one keeping off the others. But generally the biggest bucks collect each for himself several does, yearlings also being allowed in the band. The exact amount of companionship with the does allowed these young bucks depends somewhat upon the temper of the master buck.

In books by imperfectly informed writers we often see allusions to the buck as protecting the doe, or even taking care of the fawn. Charles Dudley Warner, for instance, in describing with great skill and pathos an imaginary deer hunt, after portraying the death of the doe, portrays the young fawn as following the buck when the latter comes back to it in the evening.[1] While the fawn is so young as to be wholly dependent upon the doe, the buck never comes near either. Moreover, during the period when the buck and the doe are together, the buck's attitude is merely that of a brutal, greedy, and selfish tyrant. He will unhesitatingly rob the doe of any choice bit of food, and though he will fight to keep her if another buck approaches, the moment that a dangerous foe appears his one thought is for his own preservation. He will not only desert the doe, but if he is an old and cunning buck, he will try his best to sacrifice her by diverting the attention of the pursuer to her and away from him.

By the end of the rut the old bucks are often exhausted, their sides thin, their necks swollen; though they are never as gaunt as wapiti bulls at this time. They then rest as much as possible,

[1] While the situation thus described was an impossible one, the purpose of Mr. Warner's article was excellent, it being intended as a protest against hunting deer while the fawns are young, and against killing them in the water.

feeding all the time to put on fat before winter arrives, and rapidly attaining a very high condition.

Except in dire need no one would kill a deer after the hard weather of winter begins or before the antlers of the buck are full-grown and the fawns are out of the spotted coat. Even in the old days we, who lived in the ranch country, always tried to avoid killing deer in the spring or early summer, though we often shot buck antelope at those times. The close season for deer varies in different states, and now there is generally a limit set to the number any one hunter can kill; for the old days of wasteful plenty are gone forever.

To my mind there is a peculiar fascination in hunting the mule-deer. By the time the hunting season has arrived, the buck is no longer the slinking beast of the thicket, but a bold and yet wary dweller in the uplands. Frequently he can be found clear of all cover, often at midday, and his habits at this season are, from the hunter's standpoint, rather more like those of the wapiti than of the whitetail; but each band, though continually shifting its exact position, stays permanently in the same tract of country, whereas wapiti are more apt to wander.

In the old days, when mule-deer were plentiful in country through which a horse could go at a

fair rate of speed, it was very common for the hunter to go on horseback and not to dismount save at the moment of the shot. In the early eighties, while on my ranch on the Little Missouri, this was the way in which I usually hunted. When I first established my ranch I have often gone out in the fall, after the day's work was over, and killed a deer before dark. If it was in September, I would sometimes start after supper. Later in the year I would take supper when I got back. Under such circumstances my mode of procedure was perfectly simple. Deer were plentiful. Every big tangle of hills, every set of grassy coulies winding down to a big creek bottom, was sure to contain them. The time being short, with at most only an hour or two of light, I made no effort to find the tracks of a deer or to spy one afar off. I simply rode through the likely places, across the heads of the ravines or down the winding valleys, until I jumped a deer close enough up to give me a shot. The unshod hoofs of the horse made but little noise as he shuffled along at the regular cow-pony fox trot, and I kept him close into the bank or behind cover, so as to come around each successive point without warning. If the ground was broken and rugged, I made no attempt to go fast. If, on the other hand, I struck a smooth ravine with gentle curves, I would often put the pony to a sharp

canter or gallop, so as to come quickly on any deer before it could quite make up its mind what course was best to follow. Sooner or later, as I passed a thick clump of young ash or buck brush, or came abruptly around a sharp bend, there would be a snort, and then the thud, thud, thud, of four hoofs striking the ground exactly in unison, and away would go a mule-deer with the peculiar bounding motion of its kind. The pony, well accustomed to the work, stopped short, and I was off its back in an instant. If the deer had not made out exactly what I was, it would often show by its gait that it was not yet prepared to run straight out of sight. Under such circumstances I would wait until it stopped and turned round to look back. If it was going very fast, I took the shot running. Once I thus put up a young buck from some thick brush in the bottom of a winding washout. I leaped off the pony, standing within ten yards of the washout. The buck went up a hill on my left, and as he reached the top and paused for a second on the sky line, I fired. At the shot there was a great scrambling and crashing in the washout below me, and another and larger buck came out and tore off in frantic haste. I fired several shots at him, finally bringing him down. Meanwhile, the other buck had disappeared, but there was blood on his trail, and I found him lying down in the next

coulie, and finished him. This was not much over a mile from the ranch-house, and after dressing the deer, I put one behind the saddle and one on it, and led the pony home.

Such hunting, though great fun, does not imply any particular skill either in horsemanship, marksmanship, or plainscraft and knowledge of the animal's habits; and it can of course be followed only where the game is very plentiful. Ordinarily the mule-deer must be killed by long tramping among the hills, skilful stalking, and good shooting. The successful hunter should possess good eyes, good wind, and good muscles. He should know how to take cover and how to use his rifle. The work is sufficiently rough to test any man's endurance, and yet there is no such severe and intense toil as in following true mountain game, like the bighorn or white goat. As the hunter's one aim is to see the deer before it sees him, he can only use the horse to take him to the hunting-ground, Then he must go through the most likely ground and from every point of vantage scan with minute care the landscape round about, while himself unseen. If the country is wild and the deer have not been much molested, he will be very apt to come across a band that is feeding. Under such circumstances it is easy to see them at once. But if lying down, it is astonishing how the gray of their winter coats fits in with the color of their

surroundings. Too often I have looked carefully over a valley with my glasses until, thinking I had searched every nook, I have risen and gone forward, only to see a deer rise and gallop off out of range from some spot which I certainly thought I had examined with all possible precaution. If the hunter is not himself hidden, he will have his labor for his pains. Neither the mule-deer nor the white-tail is by any means as keen-sighted as the prong-horn antelope, and men accustomed chiefly to antelope shooting are quite right in speaking of the sight of deer as poor by comparison. But this is only by comparison. A motionless object does not attract a deer's gaze as it attracts the telescopic eye of a prongbuck; but any motion is seen at once, and as soon as this has occurred, the chances of the hunter are usually at an end. On the other hand, from the nature of its haunts the mule-deer usually offers fairly good opportunities for stalking. It is not as big or as valuable as the elk, and therefore it is not as readily seen or as eagerly followed, and in consequence holds its own better. But though the sport it yields calls normally for a greater amount of hardihood and endurance in the hunter than is the case with the sport yielded by the prongbuck, and especially by the whitetail, yet when existing in like numbers it is easier to kill than either of these two animals.

Sometimes in the early fall, when hunting from the ranch, I have spent the night in some likely locality, sleeping rolled up in a blanket on the ground so as to be ready to start at the first streak of dawn. On one such occasion a couple of mule-deer came to where my horse was picketed just before I got up. I heard them snort or whistle, and very slowly unwrapped myself from the blanket, turned over, and crawled out, rifle in hand. Overhead the stars were paling in the faint gray light, but the ravine in which the deer were was still so black that, watch as I would, I could not see them. I feared to move around lest I might disturb them, but after wriggling toward a little jutting shoulder I lay still to wait for the light. They went off, however, while it was still too dusk to catch more than their dim and formless outlines, and though I followed them as rapidly and cautiously as possible, I never got a shot at them. On other occasions fortune has favored me, and before the sun rose I have spied some buck leisurely seeking his day bed, and have been able either to waylay him or make a running stalk on him from behind.

In the old days it was the regular thing with most ranchmen to take a trip in the fall for the purpose of laying in the winter's supply of venison. I frequently took such trips myself, and though occasionally we killed wapiti, bighorn, prong-

buck, and whitetail, our ordinary game was the mule-deer. Around my ranch it was not necessary to go very far. A day's journey with the wagon would usually take us to where a week's hunting would enable us to return with a dozen deer or over. If there was need of more, I would repeat the hunt later on. I have several times killed three of these deer in a day, but I do not now recall ever killing a greater number. It is perhaps unnecessary to say that every scrap of flesh was used.

These hunts were always made late in the fall, usually after the close of the rut. The deer were then banded, and were commonly found in parties of from three or four to a score, although the big bucks might be lying by themselves. The weather was apt to be cold, and the deer evidently liked to sun themselves, so that at midday they could be found lying, sometimes in thin brush and sometimes boldly out on the face of a cliff or hill. If they were unmolested, they would feed at intervals throughout the day, and not until the bands had been decimated by excessive hunting, did they ever spend the hours of daylight in hiding.

On such a hunt our proceedings were perfectly simple. The nights were longer than the days, and therefore we were away from camp at the first streak of dawn, and might not return until long after darkness. All the time between was spent

in climbing and walking through the rugged hills, keeping a sharp lookout for our game. Only too often we were seen before we ourselves saw the quarry, and even when this was not the case, the stalks were sometimes failures. Still blank days were not very common. Probably every hunter remembers with pride some particular stalk. I recall now outwitting a big buck which I had seen and failed to get on two successive days. He was hanging about a knot of hills with brush on their shoulders, and was not only very watchful, but when he lay down always made his bed at the lower end of a brush patch, whence he could see into the valley below, while it was impossible to approach him from above, through the brush, without giving the alarm. On the third day I saw him early in the morning, while he was feeding. He was very watchful, and I made no attempt to get near him, simply peeping at him until he finally went into a patch of thin brush and lay down. As I knew what he was I could distinctly make him out. If I had not seen him go in, I certainly never would have imagined that he was a deer, even had my eyes been able to pick him out at all among the gray shadows and small dead tree-tops. Having waited until he was well settled down, I made a very long turn and came up behind him, only to find that the direction of the wind and the slope of the hill rendered it an absolute

impossibility to approach him unperceived. After careful study of the ground I abandoned the effort, and returned to my former position, having spent several hours of considerable labor in vain. It was now about noon, and I thought I would lie still to see what he would do when he got up, and accordingly I ate my lunch stretched at full length in the long grass which sheltered me from the wind. From time to time I peered cautiously between two stones toward where the buck lay. It was nearly mid-afternoon before he moved. Sometimes mule-deer rise with a single motion, all four legs unbending like springs, so that the four hoofs touch the ground at once. This old buck, however, got up very slowly, looked about for certainly five minutes, and then came directly down the hill and toward me. When he had nearly reached the bottom of the valley between us he turned to the right and sauntered rapidly down it. I slipped back and trotted as fast as I could without losing my breath along the hither side of the spur which lay between me and the buck. While I was out of sight he had for some reason made up his mind to hurry, and when I was still fifty yards from the end of the spur he came in sight just beyond it, passing at a swinging trot. I dropped on one knee so quickly that for a moment he evidently could not tell what I was, — my buckskin shirt and gray slouch-hat

fading into the color of the background — and halted, looking sharply around. Before he could break into flight my bullet went through his shoulders.

Twice I have killed two of these deer at a shot; once two bucks, and once a doe and a buck.

It has proved difficult to keep the mule-deer in captivity, even in large private parks or roomy zoological gardens. I think this is because hitherto the experiment has been tried east of the Mississippi in an alien habitat. The wapiti and whitetail are species that are at home over most of the United States, East and West, in rank, wet prairies, dense woodland, and dry mountain regions alike; but the mule-deer has a far more sharply localized distribution. In the Bronx Zoological Gardens, in New York, Mr. Hornaday informs me that he has comparatively little difficulty in keeping up the stock alike of wapiti and whitetail by breeding — as indeed any visitor can see for himself. The same is true in the game preserves in the wilder regions of New York and New England; but hitherto the mule-deer has offered an even more difficult problem in captivity than the pronghorn antelope. Doubtless the difficulty would be minimized if the effort at domestication were made in the neighborhood of the Rocky Mountains.

The true way to preserve the mule-deer, however, as well as our other game, is to establish on the nation's property great nurseries and wintering grounds, such as the Yellowstone Park, and then to secure fair play for the deer outside these grounds by a wisely planned and faithfully executed series of game laws. This is the really democratic method of solving the problem. Occasionally even yet some one will assert that the game "belongs to the people, and should be given over to them" — meaning, thereby, that there should be no game laws, and that every man should be at liberty indiscriminately to kill every kind of wild animal, harmless, useless, or noxious, until the day when our woods become wholly bereft of all the forms of higher animal life. Such an argument can only be made from the standpoint of those big game dealers in the cities who care nothing for the future, and desire to make money at the present day by a slaughter which in the last analysis only benefits the wealthy people who are able to pay for the game, — for once the game has been destroyed, the livelihood of the professional gunner will be taken away. Most emphatically wild game not on private property *does* belong to the people, and the only way in which the people can secure their ownership is by protecting it in the interest of all against the vandal few. As we grow older I

think most of us become less keen about that part of the hunt which consists in the killing. I know that as far as I am concerned I have long gone past the stage when the chief end of a hunting trip was the bag. One or two bucks, or enough grouse and trout to keep the camp supplied, will furnish all the sport necessary to give zest and point to a trip in the wilderness. When hunters proceed on such a plan they do practically no damage to the game. Those who are not willing to act along these lines of their own free will, should be made to by the state. The people of Montana, Wyoming, and Colorado, and of the states near by, can do a real service, primarily to themselves, but secondarily to others also, by framing and executing laws which will keep these noble deer as permanent denizens of their lofty mountains and beautiful valleys. There are other things much more important than game laws; but it will be a great mistake to imagine because until recently in Europe game laws have been administered in the selfish interest of one class and against the interest of the people as a whole, that here in this country, and under our institutions, they would not be beneficial to all our people. So far from game laws being in the interest of the few, they are emphatically in the interest of the many. The very rich man can stock a private game preserve, or journey afar off

to where game is still plentiful; but it is only where the game is carefully preserved by the state that the man of small means has any chance to enjoy the keen delight of the chase.

CHAPTER III

THE WHITETAIL DEER

THE whitetail deer is now, as it always has been, the most plentiful and most widely distributed of American big game. It holds its own in the land better than any other species, because it is by choice a dweller in the thick forests and swamps, the places around which the tide of civilization flows, leaving them as islets of refuge for the wild creatures which formerly haunted all the country. The range of the whitetail is from the Atlantic to the Pacific, and from the Canadian to the Mexican borders, and somewhat to the north and far to the south of these limits. The animal shows a wide variability, both individually and locally, within these confines; from the hunter's standpoint it is not necessary to try to determine exactly the weight that attaches to these local variations.

There is also a very considerable variation in habits. As compared with the mule-deer, the whitetail is not a lover of the mountains. As compared with the prongbuck, it is not a lover of

the treeless plains. Yet in the Alleghanies and the Adirondacks, at certain seasons especially, and in some places at all seasons, it dwells high among the densely wooded mountains, wandering over their crests and sheer sides, and through the deep ravines; while in the old days there were parts of Texas and the Indian Territory where it was found in great herds far out on the prairie. Moreover, the peculiar nature of its chosen habitat, while generally enabling it to resist the onslaught of man longer than any of its fellows, sometimes exposes it to speedy extermination. To the westward of the rich bottom-lands and low prairies of the Mississippi Valley proper, when the dry plains country is reached, the natural conditions are much less favorable for whitetail than for other big game. The black bear, which in the East has almost precisely the same habitat as the whitetail, disappears entirely on the great plains, and reappears in the Rockies in regions which the whitetail does not reach. All over the great plains, into the foot-hills of the Rockies, the whitetail is found, but only in the thick timber of the river bottoms. Throughout the regions of the Upper Missouri and Upper Platte, the Big Horn, Powder, Yellowstone, and Cheyenne, over all of which I have hunted, the whitetail lives among the cottonwood groves and dense brush growth that fringe the river beds and here and

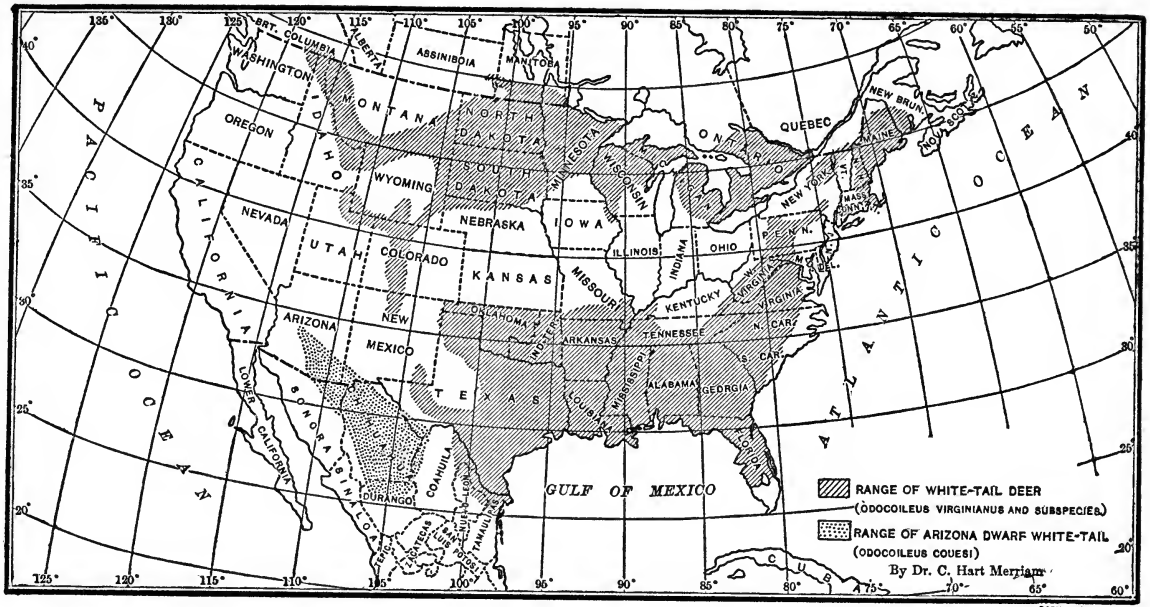
there extend some distance up the mouths of the large creeks. In these places the whitetail and the mule-deer may exist in close proximity; but normally neither invades the haunts of the other.

Along the ordinary plains river, such as the Little Missouri, where I ranched for many years, there are three entirely different types of country through which a man passes as he travels away from the bed of the river. There is first the alluvial river bottom covered with cottonwood and box-elder, together with thick brush. These bottoms may be a mile or two across, or they may shrink to but a few score yards. After the extermination of the wapiti, which roamed everywhere, the only big game animal found in them was the whitetail deer. Beyond this level alluvial bottom the ground changes abruptly to bare, rugged hills or fantastically carved and shaped Bad Lands rising on either side of the river, the ravines, coulies, creeks, and canyons twisting through them in every direction. Here there are patches of ash, cedar, pine, and occasionally other trees, but the country is very rugged, and the cover very scanty. This is the home of the mule-deer, and, in the roughest and wildest parts, of the bighorn. The absolutely clear and sharply defined line of demarkation between this rough, hilly country, flanking the river, and the alluvial river bottom, serves as an equally clearly marked line of de-

markation between the ranges of the whitetail and the mule-deer. This belt of broken country may be only a few hundred yards in width; or it may extend for a score of miles before it changes into the open prairies, the high plains proper. As soon as these are reached, the prongbuck's domain begins.

As the plains country is passed, and the vast stretches of mountainous region entered, the river bottoms become narrower, and the plains on which the prongbuck is found become of very limited extent, shrinking to high valleys and plateaus, while the mass of rugged foot-hills and mountains add immensely to the area of the mule-deer's habitat.

Given equal areas of country, of the three different types alluded to above, that in which the mule-deer is found offers the greatest chance of success to the rifle-bearing hunter, because there is enough cover to shield him and not enough to allow his quarry to escape by stealth and hiding. On the other hand, the thick river bottoms offer him the greatest difficulty. In consequence, where the areas of distribution of the different game animals are about equal, the mule-deer disappears first before the hunter, the prongbuck next, while the whitetail holds out the best of all. I saw this frequently on the Yellowstone, the Powder, and the Little Missouri. When the


PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
BRT. COLUMBIA
ALBERTA
ASSINIBOIA
MANITOBA
WASHINGTON
OREGON
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
ONTARIO
QUEBEC
NEW BRUNS.
NOVA SCOTIA
MAINE
WYOMING
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
NEW YORK
VERMONT
N. H.
MASS.
CONN.
R. I.
N. J.
PENN.
MD.
DEL.
VIRGINIA
W. VIRGINIA
KENTUCKY
TENNESSEE
N. CAR.
S. CAR.
GEORGIA
ALABAMA
MISSISSIPPI
LOUIS.
ARKANSAS
INDEP. TER.
OKLAHOMA
KANSAS
MISSOURI
NEVADA
UTAH
COLORADO
ARIZONA
NEW MEXICO
TEXAS
CALIFORNIA
LOWER CALIFORNIA
SONORA
CHIHUAHUA
DURANGO
COAHUILA
NUEVO LEON
TAMAULIPAS
TEPIC
ZACATECAS
SAN LUIS POTOSI
GUANAJUATO
QUERETARO
HIDALGO
VERA CRUZ
TABASCO
YUCATAN
CUBA
RANGE OF WHITE-TAIL DEER
(ODOCOILEUS VIRGINIANUS AND SUBSPECIES)
RANGE OF ARIZONA DWARF WHITE-TAIL
(ODOCOILEUS COUESI)
By Dr. C. Hart Merriam
BORMAY & CO., N.Y.

ranchman first came into this country the mule-deer swarmed, and yielded a far more certain harvest to the hunter than did either the prong-buck or the whitetail. They were the first to be thinned out, the prongbuck lasting much better. The cowboys and small ranchmen, most of whom did not at the time have hounds, then followed the prongbuck; and this, in its turn, was killed out before the whitetail. But in other places a slight change in the conditions completely reversed the order of destruction. In parts of Wyoming and Montana the mountainous region where the mule-deer dwelt was of such vast extent, and the few river bottoms on which the white-tail were found were so easily hunted, that the whitetail was completely exterminated throughout large districts where the mule-deer continued to abound. Moreover, in these regions the table-lands and plains upon which the prongbuck was found were limited in extent, and although the prongbuck outlasted the whitetail, it vanished long before the herds of the mule-deer had been destroyed from among the neighboring mountains.

The whitetail was originally far less common in the forests of northern New England than was the moose, for in the deep snows the moose had a much better chance to escape from its brute foes and to withstand cold and starvation. But when man appeared upon the scene he followed

the moose so much more eagerly than he followed the deer that the conditions were reversed and the moose was killed out. The moose thus vanished entirely from the Adirondacks, and almost entirely from Maine; but the excellent game laws of the latter state, and the honesty and efficiency with which they have been executed during the last twenty years, has resulted in an increase of moose during that time. During the same period the whitetail deer has increased to an even greater extent. It is doubtless now more plentiful in New York and New England than it was a quarter of a century ago. Stragglers are found in Connecticut, and, what is still more extraordinary, even occasionally come into wild parts of densely populated little Rhode Island, — my authority for the last statement being Mr. C. Grant La Farge. Of all our wild game, the whitetail responds most quickly to the efforts for its protection, and except the wapiti, it thrives best in semi-domestication; in consequence, it has proved easy to preserve it, even in such places as Cape Cod in Massachusetts and Long Island in New York; while it has increased greatly in Vermont, New Hampshire, and Maine, and has more than held its own in the Adirondacks. Mr. James R. Sheffield, of New York City, in the summer of 1899, spent several weeks on a fishing trip through northern Maine. He kept count of the moose

and deer he saw, and came across no less than thirty-five of the former and over five hundred and sixty of the latter; in the most lonely parts of the forest deer were found by the score, feeding in broad daylight on the edges of the ponds. Deer are still plentiful in many parts of the Alleghany Mountains, from Pennsylvania southward, and also in the swamps and cane-brakes of the South Atlantic and Gulf states.

Where the differences in habitat and climate are so great there are many changes of habits, and some of them of a noteworthy kind. Mr. John A. McIllhenny, of Avery's Island, Louisiana, formerly a lieutenant in my regiment, lives in what is still a fine game country. His plantation is in the delta of the Mississippi, among the vast marshes, north of which lie the wooded swamps. Both the marshes and the swamps were formerly literally thronged with whitetail deer, and the animals are still plentiful in them. Mr. McIllhenny has done much deer-hunting, always using hounds. He informs me that the breeding times are unexpectedly different from those of the northern deer. In the North, in different localities, the rut takes place in October or November, and the fawns are dropped in May or June. In the Louisiana marshes around Avery's Island the rut begins early in July and the fawns are dropped in February. In the swamps immedi-

ately north of these marshes the dates are fully a month later. The marshes are covered with tall reeds and grass, and broken by bayous, while there are scattered over them what are called "islands" of firmer ground overgrown with timber. In this locality the deer live in the same neighborhood all the year round, just as, for instance, they do on Long Island. So on the Little Missouri, in the neighborhood of my ranch, they lived in exactly the same localities throughout the entire year. Occasionally they would shift from one river bottom to another, or go a few miles up or down stream because of scarcity of food. But there was no general shifting.

On the Little Missouri, in one place where they were not molested, I knew a particular doe and fawn with whose habits I became quite intimately acquainted. When the moon was full they fed chiefly by night, and spent most of the day lying in the thick brush. When there was little or no moon they would begin to feed early in the morning, then take a siesta, and then — what struck me as most curious of all — would go to a little willow-bordered pool about noon to drink, feeding for some time both before and after drinking. After another siesta they would come out late in the afternoon and feed until dark.

In the Adirondacks the deer often alter their habits completely at different seasons. Soon after

the fawns are born they come down to the water's edge, preferring the neighborhood of the lakes, but also haunting the stream banks. The next three months, during the hot weather, they keep very close to the water, and get a large proportion of their food by wading in after the lilies and other aquatic plants. Where they are much hunted, they only come to the water's edge after dark, but in regions where they are little disturbed they are quite as often diurnal in their habits. I have seen dozens feeding in the neighborhood of a lake, some of them two or three hundred yards out in shallow places, up to their bellies; and this after sunrise, or two or three hours before sunset. Before September the deer cease coming to the water, and go back among the dense forests and on the mountains. There is no genuine migration, as in the case of the mule-deer, from one big tract to another, and no entire desertion of any locality. But the food supply which drew the animals to the water's edge during the summer months shows signs of exhaustion toward fall; the delicate water-plants have vanished, the marsh-grass is dying, and the lilies are less succulent. An occasional deer still wanders along the shores or out into the lake, but most of them begin to roam the woods, eating the berries and the leaves and twig ends of the deciduous trees, and even of some of the conifers, although a whitetail is fond of grazing, especially upon the

tips of the grass itself. I have seen moose feeding on the tough old lily stems and wading after them when the ice had skimmed the edges of the pool. But the whitetail has usually gone back into the woods long before freezing time.

From Long Island south there is not enough snow to make the deer alter their habits in the winter. As soon as the rut is over, which in different localities may be from October to December, whitetail are apt to band together — more apt than at any other season, although even then they are often found singly or in small parties. While nursing, the does have been thin, and at the end of the rut the bucks are gaunt, with their necks swollen and distended. From that time on bucks and does alike put on flesh very rapidly in preparation for the winter. Where there is no snow, or not enough to interfere with their travelling, they continue to roam anywhere through the woods and across the natural pastures and meadows, eating twigs, buds, nuts, and the natural hay which is cured on the stalk.

In the northern woods they form yards during the winter. These yards are generally found in a hardwood growth which offers a supply of winter food, and consist simply of a tangle of winding trails beaten out through the snow by the incessant passing and repassing of the animal. The yard merely enables the deer to move along the

various paths in order to obtain food. If there are many deer together, the yards may connect by interlacing paths, so that a deer can run a considerable distance through them. Often, however, each deer will yard by itself, as food is the prime consideration, and a given locality may only have enough to support a single animal. When the snows grow deep the deer is wholly unable to move, once the yard is left, and hence it is absolutely at the mercy of a man on snow-shoes, or of a cougar or a wolf, if found at such times. The man on snow-shoes can move very comfortably; and the cougar and the wolf, although hampered by the snow, are not rendered helpless like the deer. I have myself scared a deer out of a yard, and seen it flounder helplessly in a great drift before it had gone thirty rods. When I came up close it ploughed its way a very short distance through the drifts, making tremendous leaps. But as the snow was over six feet deep, so that the deer sank below the level of the surface at each jump, and yet could not get its feet on the solid ground, it became so exhausted that it fell over on its side and bleated in terror as I came up; after looking at it I passed on. Hide hunters and frontier settlers sometimes go out after the deer on snow-shoes when there is a crust, and hence this method of killing is called crusting. It is simple butchery, for the deer cannot, as the

moose does, cause its pursuer a chase which may last days. No self-respecting man would follow this method of hunting save from the necessity of having meat.

In very wild localities deer sometimes yard on the ice along the edges of lakes, eating off all the twigs and branches, whether of hardwood trees or of conifers, which they can reach.

At the beginning of the rut the does flee from the bucks, which follow them by scent at full speed. The whitetail buck rarely tries to form a herd of does, though he will sometimes gather two or three. The mere fact that his tactics necessitate a long and arduous chase after each individual doe prevents his organizing herds as the wapiti bull does. Sometimes two or three bucks will be found strung out one behind the other, following the same doe. The bucks wage desperate battle among themselves during this season, coming together with a clash, and then pushing and straining for an hour or two at a time, with their mouths open, until the weakest gives way. As soon as one abandons the fight he flees with all possible speed, and usually escapes unscathed. While head to head there is no opportunity for a disabling thrust, but if, in the effort to retreat, the beaten buck gets caught, he may be killed. Owing to the character of the antlers whitetail bucks are peculiarly

apt to get them interlocked in such a fight, and if the efforts of the two beasts fail to disentangle them, both ultimately perish by starvation. I have several times come across a pair of skulls with interlocked antlers. The same thing occurs, though far less frequently, to the mule-deer and even the wapiti.

The whitetail is the most beautiful and graceful of all our game animals when in motion. I have never been able to agree with Judge Caton that the mule-deer is clumsy and awkward in his gait. I suppose all such terms are relative. Compared to the moose or caribou the mule-deer is light and quick in his movements, and to me there is something very attractive in the poise and power with which one of the great bucks bounds off, all four legs striking the earth together and shooting the body upward and forward as if they were steel springs. But there can be no question as to the infinitely superior grace and beauty of the whitetail when he either trots or runs. The mule-deer and blacktail bound, as already described. The prongbuck gallops with an even gait, and so does the bighorn, when it happens to be caught on a flat; but the whitetail moves with an indescribable spring and buoyancy. If surprised close up, and much terrified, it simply runs away as hard as it can, at a gait not materially different from that of any other

game animal under like circumstances, while its head is thrust forward and held down, and the tail is raised perpendicularly. But normally its mode of progression, whether it trots or gallops, is entirely unique. In trotting, the head and tail are both held erect, and the animal throws out its legs with a singularly proud and free motion, bringing the feet well up, while at every step there is an indescribable spring. In the canter or gallop the head and tail are also held erect, the flashing white brush being very conspicuous. Three or four low, long, marvellously springy bounds are taken, and then a great leap is made high in the air, which is succeeded by three or four low bounds, and then by another high leap. A whitetail going through the brush in this manner is a singularly beautiful sight. It has been my experience that they are not usually very much frightened by an ordinary slow trackhound, and I have seen a buck play along in front of one, alternately trotting and cantering, head and flag up, and evidently feeling very little fear.

To my mind the chase of the whitetail, as it must usually be carried on, offers less attraction than the chase of any other kind of our large game. But this is a mere matter of taste, and such men as Judge Caton and Mr. George Bird Grinnell have placed it above all others as a game animal. Personally I feel that the chase of any

animal has in it two chief elements of attraction. The first is the chance given to be in the wilderness; to see the sights and hear the sounds of wild nature. The second is the demand made by the particular kind of chase upon the qualities of manliness and hardihood. As regards the first, some kinds of game, of course, lead the hunter into particularly remote and wild localities; and the farther one gets into the wilderness, the greater is the attraction of its lonely freedom. Yet to camp out at all implies some measure of this delight. The keen, fresh air, the breath of the pine forests, the glassy stillness of the lake at sunset, the glory of sunrise among the mountains, the shimmer of the endless prairies, the ceaseless rustle of the cottonwood leaves, where the wagon is drawn up on the low bluff of the shrunken river — all these appeal intensely to any man, no matter what may be the game he happens to be following. But there is a wide variation, and indeed contrast, in the qualities called for in the chase itself, according as one quarry or another is sought.

The qualities that make a good soldier are, in large part, the qualities that make a good hunter. Most important of all is the ability to shift for one's self, the mixture of hardihood and resourcefulness which enables a man to tramp all day in the right direction, and, when night comes, to

make the best of whatever opportunities for shelter and warmth may be at hand. Skill in the use of the rifle is another trait; quickness in seeing game, another; ability to take advantage of cover, yet another; while patience, endurance, keenness of observation, resolution, good nerves, and instant readiness in an emergency, are all indispensable to a really good hunter.

The chase of an animal should rank according as it calls for the exercise in a high degree of a large number of these qualities. The grizzly is almost our only dangerous game, and under certain conditions shooting the grizzly calls for considerable courage on the part of the hunter. Disregarding these comparatively rare occasions, the chase of mountain game, especially the bighorn, demands more hardihood, power of endurance, and moral and physical soundness than any other kind of sport, and so must come first. The wapiti and mule-deer rank next, for they too must be killed by stalking as a result of long tramps over very rough ground. To kill a moose by still hunting is a feat requiring a high degree of skill, and entailing severe fatigue. When game is followed on horseback, it means that the successful hunter must ride well and boldly.

The whitetail is occasionally found where it yields a very high quality of sport. But normally it lives in regions where it is extremely difficult to

kill it legitimately, as the wapiti and mule-deer are killed, and yet comparatively easy to kill it under circumstances which make no demand for any particular prowess on the part of the hunter. It is far more difficult to still hunt successfully in the dense brushy timber frequented by the whitetail than in the open glades, the mountains, and the rocky hills, through which the wapiti and mule-deer wander. The difficulty arises, however, because the chief requirement is stealth, noiselessness. The man who goes out into the hills for a mule-deer must walk hard and far, must be able to bear fatigue, and possibly thirst and hunger, must have keen eyes, and be a good shot. He does not need to display the extraordinary power of stealthy advance which is necessary to the man who would creep up to and kill a whitetail in thick timber. Now, the qualities of hardihood and endurance are better than the quality of stealth, and though all three are necessary in both kinds of chase, yet it is the chase of the mule-deer which most develops the former, and the chase of the whitetail which most develops the latter. When the woods are bare and there is some snow on the ground, however, still hunting the whitetail becomes not only possible, but a singularly manly and attractive kind of sport. Where the whitetail can be followed with horse and hound, the sport is of course of a very high

order. To be able to ride through woods and over rough country at full speed, rifle or shotgun in hand, and then to leap off and shoot at a running object, is to show that one has the qualities which made the cavalry of Forrest so formidable in the Civil War. There could be no better training for the mounted rifleman, the most efficient type of modern soldier.

By far the easiest way to kill the whitetail is in one or other of certain methods which entail very little work or skill on the part of the hunter. The most noxious of these, crusting in the deep snows, has already been spoken of. No sportsman worthy of the name would ever follow so butcherly a method. Fire hunting must also normally be ruled out. It is always mere murder if carried on by a man who sits up at a lick, and is not much better where the hunter walks through the fields — not to mention the fact that on such a walk he is quite as apt to kill stock as to kill a deer. But fire hunting from a boat, or jacking, as it is called, though it entails absolutely no skill in the hunter, and though it is, and ought to be, forbidden, as it can best be carried on in the season when nursing does are particularly apt to be the victims, nevertheless has a certain charm of its own. The first deer I ever killed, when a boy, was obtained in this way, and I have always been glad to have had the experience,

though I have never been willing to repeat it. I was at the time camped out in the Adirondacks.

Two or three of us, all boys of fifteen or sixteen, had been enjoying what was practically our first experience in camping out, having gone out with two guides, Hank Martin and Mose Sawyer, from Paul Smith's on Lake St. Regis. My brother and cousin were fond of fishing and I was not, so I was deputed to try to bring in a deer. I had a double-barrelled 12-bore gun, French pin-fire, with which I had industriously collected "specimens" on a trip to Egypt and around Oyster Bay, Long Island; except for three or four enthralling, but not oversuccessful, days, after woodcock and quail, around the latter place, I had done no game shooting. As to every healthy boy with a taste for outdoor life, the northern forests were to me a veritable land of enchantment. We were encamped by a stream among the tall pines, and I had enjoyed everything; poling and paddling the boat, tramping through the woods, the cries of chickaree and chipmunk, of jay, woodpecker, chickadee, nuthatch, and cross-bill, which broke the forest stillness; and, above all, the great reaches of sombre woodland themselves. The heart-shaped footprints which showed where the deer had come down to drink and feed on the marshy edges of the water made my veins

thrill; and the nights around the flickering campfire seemed filled with romance.

My first experiment in jacking was a failure. The jack, a bark lantern, was placed upon a stick in the bow of the boat, and I sat in a cramped huddle behind it, while Mose Sawyer plied the paddle with noiseless strength and skill in the stern. I proved unable to respond even to the very small demand made upon me, for when we actually did come upon a deer I failed to see it until it ran, when I missed it; and on the way back capped my misfortune by shooting at a large owl which perched on a log projecting into the water, looking at the lantern with two glaring eyes.

All next day I was miserably conscious of the smothered disfavor of my associates, and when night fell was told I would have another chance to redeem myself. This time we started across a carry, the guide carrying the light boat, and launched it in a quiet little pond about a mile off. Dusk was just turning into darkness when we reached the edge of the little lake, which was perhaps a mile long by three-quarters of a mile across, with indented shores. We did not push off for half an hour or so, until it was entirely dark; and then for a couple of hours we saw no deer. Nevertheless, I thoroughly enjoyed the ghostly, mysterious, absolutely silent night ride over the water.

Not the faintest splash betrayed the work of the paddler. The boat glided stealthily alongshore, the glare of the lantern bringing out for one moment every detail of the forest growth on the banks, which the next second vanished into absolute blackness. Several times we saw muskrats swimming across the lane of light cut by the lantern through the darkness, and two or three times their sudden plunging and splashing caused my heart to leap. Once when we crossed the lake we came upon a loon floating buoyantly right out in the middle of it. It stayed until we were within ten yards, so that I could see the minute outlines of the feathers and every movement of the eye. Then it swam off, but made no cry. At last, while crossing the mouth of a bay we heard a splashing sound among the lilies inshore, which even my untrained ears recognized as different from any of the other noises we had yet heard, and a jarring motion of the paddle showed that the paddler wished me to be on the alert. Without any warning the course of the boat was suddenly changed, and I was aware that we were moving stern foremost. Then we swung around, and I could soon make out that we were going down the little bay. The forest-covered banks narrowed; then the marsh at the end was lighted up, and on its hither edge, knee-deep among the water-lilies, appeared the figure of a yearling buck still

in the red. It stood motionless, gazing at the light with a curiosity wholly unmixed with alarm, and at the shot wheeled and fell at the water's edge. We made up our mind to return to camp that night, as it was before midnight. I carried the buck and the torch, and the guide the boat, and the mile walk over the dim trail, occasionally pitching forward across a stump or root, was a thing to be remembered. It was my first deer, and I was very glad to get it; but although only a boy, I had sense enough to realize that it was not an experience worth repeating. The paddler in such a case deserves considerable credit, but the shooter not a particle, even aside from the fact to which I have already alluded, that in too many cases such shooting results in the killing of nursing does. No matter how young a sportsman is, if he has a healthy mind, he will not long take pleasure in any method of hunting in which somebody else shows the skill and does the work so that his share is only nominal. The minute that sport is carried on on these terms it becomes a sham, and a sham is always detrimental to all who take part in it.

Whitetail are comparatively easily killed with hounds, and there are very many places where this is almost the only way they can be killed at all. Formerly in the Adirondacks this method of hunting was carried on under circumstances

which rendered those who took part in it objects of deserved contempt. The sportsman stood in a boat while his guides put out one or two hounds in the chosen forest side. After a longer or shorter run the deer took to the water; for whitetail are excellent swimmers, and when pursued by hounds try to shake them off by wading up or down stream, or by swimming across a pond, and, if tired, come to bay in some pool or rapid. Once the unfortunate deer was in the water, the guide rowed the boat after it. If it was yet early in the season, and the deer was still in the red summer coat, he would sink when shot, and therefore the guide would usually take hold of its tail before the would-be Nimrod butchered it. If the deer was in the blue, the carcass would float, so it was not necessary to do anything quite so palpably absurd. But such sport, so far as the man who did the shooting was concerned, had not one redeeming feature. The use of hounds has now been prohibited by law.

In regions where there are no lakes, and where the woods are thick, the shooters are stationed at runways by which it is supposed the deer may pass when the hounds are after them. Under such circumstances the man has to show the skill requisite to hit the running quarry, and if he uses the rifle, this means that he must possess a certain amount of address in handling the weapon. But

no other quality is called for, and so even this method, though often the only possible one (and it may be necessary to return to it in the Adirondacks) can never rank high in the eyes of men who properly appreciate what big game hunting should be. It is the usual method of killing deer on Long Island, during the three or four days of each year when they can be legally hunted. The deer are found along the south and centre of the eastern half of the island; they were nearly exterminated a dozen years ago, but under good laws they have recently increased greatly. The extensive grounds of the various sportsmen's clubs, and the forests of scrub-oak in the scantily settled inland region, give them good harbors and sanctuaries. On the days when it is legal to shoot them, hundreds of hunters turn out from the neighborhood, and indeed from all the island and from New York. On such a day it is almost impossible to get any work done; for the sport is most democratic, and is shared by everybody. The hunters choose their position before dawn, lying in lines wherever deer are likely to pass, while the hounds are turned into every patch of thick cover. A most lively day follows, the fusillade being terrific; some men are invariably shot, and a goodly number of deer are killed, mostly by wily old hunters who kill ducks and quail for a living in the fall.

When the horse is used together with the

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hounds the conditions are changed. To ride a horse over rough country after game always implies hardihood and good horsemanship, and therefore makes the sport a worthy one. In very open country, — in such country, for instance, as the whitetail formerly frequented both in Texas and the Indian Territory, — the horseman could ride at the tail of the pack until the deer was fairly run down. But nowadays I know of no place where this is possible, for the whitetail's haunts are such as to make it impracticable for any rider to keep directly behind the hounds. What he must do is to try to cut the game off by riding from point to point. He then leaps off the horse and watches his chance for a shot. This is the way in which Mr. McIllhenny has done most of his deer hunting, in the neighborhood of his Louisiana plantation.

Around my ranch I very rarely tried to still-hunt whitetail, because it was always easier to get mule-deer or prongbuck, if I had time to go off for an all-day's hunt. Occasionally, however, we would have at the ranch hounds, usually of the old black-and-tan southern type, and then if we needed meat, and there was not time for a hunt back in the hills, we would turn out and hunt one or two of the river bottoms with these hounds. If I rode off to the prairies or the hills I went alone, but if the quarry was a whitetail, our chance

of success depended upon our having a sufficient number of guns to watch the different passes and runways. Accordingly, my own share of the chase was usually limited to the fun of listening to the hounds, and of galloping at headlong speed from one point where I thought the deer would not pass to some other, which, as a matter of fact, it did not pass either. The redeeming feature of the situation was that if I did get a shot, I almost always got my deer. Under ordinary circumstances to merely wound a deer is worse than not hitting it; but when there are hounds along they are certain to bring the wounded animal to bay, and so on these hunts we usually got venison.

Of course, I occasionally did get a whitetail when I was alone, whether with the hounds or without them. There were whitetail on the very bottom on which the ranch-house stood, as well as on the bottom opposite, and on those to the right and left up and down stream. Occasionally I have taken the hounds out alone, and then as they chevied the whitetail around the bottom, have endeavored by rapid running on foot or on horseback to get to some place from which I could obtain a shot. The deer knew perfectly well that the hounds could not overtake them, and they would usually do a great deal of sneaking round and round through the underbrush and cottonwoods before they finally made up their

minds to leave the bottom. On one occasion a buck came sneaking down a game trail through the buck brush where I stood, going so low that I could just see the tips of his antlers, and though I made desperate efforts I was not able to get into a position from which I could obtain a shot. On another occasion, while I was looking intently into a wood through which I was certain a deer would pass, it deliberately took to the open ground behind me, and I did not see it until it was just vanishing. Normally, the end of my efforts was that the deer went off and the hounds disappeared after it, not to return for six or eight hours. Once or twice things favored me; I happened to take the right turn or go in the right direction, and the deer happened to blunder past me; and then I returned with venison for supper. Two or three times I shot deer about nightfall or at dawn, in the immediate neighborhood of the ranch, obtaining them by sneaking as noiselessly as possible along the cattle trails through the brush and timber, or by slipping along the edge of the river bank. Several times I saw deer while I was sitting on the piazza or on the door-step of the ranch, and on one occasion I stepped back into the house, got the rifle, and dropped the animal from where I stood.

On yet other occasions I obtained whitetail which lived not on the river bottoms but among

the big patches of brush and timber in the larger creeks. When they were found in such country I hunted them very much as I hunted the mule-deer, and usually shot one when I was expecting as much to see a mule-deer as a whitetail. When the game was plentiful I would often stay on my horse until the moment of obtaining the shot, especially if it was in the early morning or late evening. My method then was to ride slowly and quietly down the winding valleys and across the spurs, hugging the bank, so that if deer were feeding in the open, I would get close up before either of us saw the other. Sometimes the deer would halt for a moment when it saw me, and sometimes it would bound instantly away. In either case my chance lay in the speed with which I could jump off the horse and take my shot. Even in favorable localities this method was of less avail with whitetail than mule-deer, because the former were so much more apt to skulk.

As soon as game became less plentiful my hunting had to be done on foot. My object was to be on the hunting-ground by dawn, or else to stay out there until it grew too dark to see the sights of my rifle. Often all I did was to keep moving as quietly as possible through likely ground, ever on the alert for the least trace of game; sometimes I would select a lookout and

carefully scan a likely country to see if I could not detect something moving. On one occasion I obtained an old whitetail buck by the simple exercise of patience. I had twice found him in a broad basin, composed of several coulies, all running down to form the head of a big creek, and all of them well timbered. He dodged me on both occasions, and I made up my mind that I would spend a whole day in watching for him from a little natural ambush of sage brush and cedar on a high point which overlooked the entire basin. I crept up to my ambush with the utmost caution early in the morning, and there I spent the entire day, with my lunch and a water-bottle, continually scanning the whole region most carefully with the glasses. The day passed less monotonously than it sounds, for every now and then I would catch a glimpse of wild life; once a fox, once a coyote, and once a badger; while the little chipmunks had a fine time playing all around me. At last, about mid-afternoon, I suddenly saw the buck come quietly out of the dense thicket in which he had made his midday bed, and deliberately walk up a hillside and lie down in a thin clump of ash where the sun could get at him — for it was in September, just before the rut began. There was no chance of stalking him in the place he had chosen, and all I could do was to wait. It was nearly sunset before he moved again, except that

I occasionally saw him shift his head. Then he got up and after carefully scrutinizing all the neighborhood, moved down into a patch of fairly thick brush, where I could see him standing and occasionally feeding, all the time moving slowly up the valley. I now slipped most cautiously back and trotted nearly a mile until I could come up behind one of the ridges bounding the valley in which he was. The wind had dropped, and it was almost absolutely still when I crawled flat on my face to the crest, my hat in my left hand, my rifle in my right. There was a big sage bush conveniently near, and under this I peered. There was a good deal of brush in the valley below, and if I had not known that the buck was there, I would never have discovered him. As it was, I watched for a quarter of an hour, and had about made up my mind that he must have gone somewhere else, when a slight movement nearly below me attracted my attention, and I caught a glimpse of him, nearly three hundred yards off, moving quietly along by the side of a little dry watercourse which was right in the middle of the brush. I waited until he was well past, and then again slipped back with the utmost care, and ran on until I was nearly opposite the head of the coulie, when I again approached the ridge line. Here there was no sage brush, only tufts of tall grass, which were stirring in the little breeze which had just sprung

up — fortunately in the right direction. Taking advantage of a slight inequality in the soil, I managed to get behind one of these tufts, and almost immediately saw the buck. Toward the head of the coulie the brush had become scanty and low, and he was now walking straight forward, evidently keeping a sharp lookout. The sun had just set. His course took him past me at a distance of eighty yards. When directly opposite I raised myself on my elbows, drawing up the rifle, which I had shoved ahead of me. The movement of course caught his eye at once; he halted for one second to look around and see what it was, and during that second I pulled the trigger. Away he went, his white flag switching desperately, and though he galloped over the hill, I felt he was mine. However, when I got to the top of the rise over which he had gone, I could not see him, and as there was a deep though narrow coulie filled with brush on the other side, I had a very ugly feeling that I might have lost him, in spite of the quantity of blood he had left along his trail. It was getting dark, and I plunged quickly into the coulie. Usually a wounded deer should not be followed until it has had time to grow stiff, but this was just one of the cases where the rule would have worked badly; in the first place, because darkness was coming on, and in the next place, because the animal was certain to die

shortly, and all that I wanted was to see where he was. I followed his trail into the coulie, and expected to find that he had turned down it, but a hurried examination in the fading light showed me that he had taken the opposite course, and I scrambled hastily out on the other side, and trotted along, staring into the brush, and now and then shouting or throwing in a clod of earth. When nearly at the head there was a crackling in the brush, and out burst the wounded buck. He disappeared behind a clump of elms, but he had a hard hill to go up, and the effort was too much for him. When I next saw him he had halted, and before I could fire again down he came.

On another occasion I spied a whole herd of whitetail feeding in a natural meadow, right out in the open, in mid-afternoon, and was able to get up so close that when I finally shot a yearling buck (which was one of the deer farthest away from me, there being no big buck in the outfit) the remaining deer, all does and fawns, scattered in every direction, some galloping right past me in their panic. Once or twice I was able to perform a feat of which I had read, but in which I scarcely believed. This was to creep up to a deer while feeding in the open, by watching when it shook its tail, and then remaining motionless. I cannot say whether the habit is a universal one,

but on two occasions at least I was able thus to creep up to the feeding deer, because before lifting its head it invariably shook its tail, thereby warning me to stay without moving until it had lifted its head, scrutinized the landscape, and again lowered its head to graze. The eyesight of the whitetail, as compared with that of the prong-horn antelope, is poor. It notes whatever is in motion, but it seems unable to distinguish clearly anything that is not in motion. On the occasions in question no antelope that I have ever seen would have failed to notice me at once and to take alarm. But the whitetail, although it scrutinized me narrowly, while I lay motionless with my head toward it, seemed in each case to think that I must be harmless, and after a while it would go on feeding. In one instance the animal fed over a ridge and walked off before I could get a shot; in the other instance I killed it.

CHAPTER IV

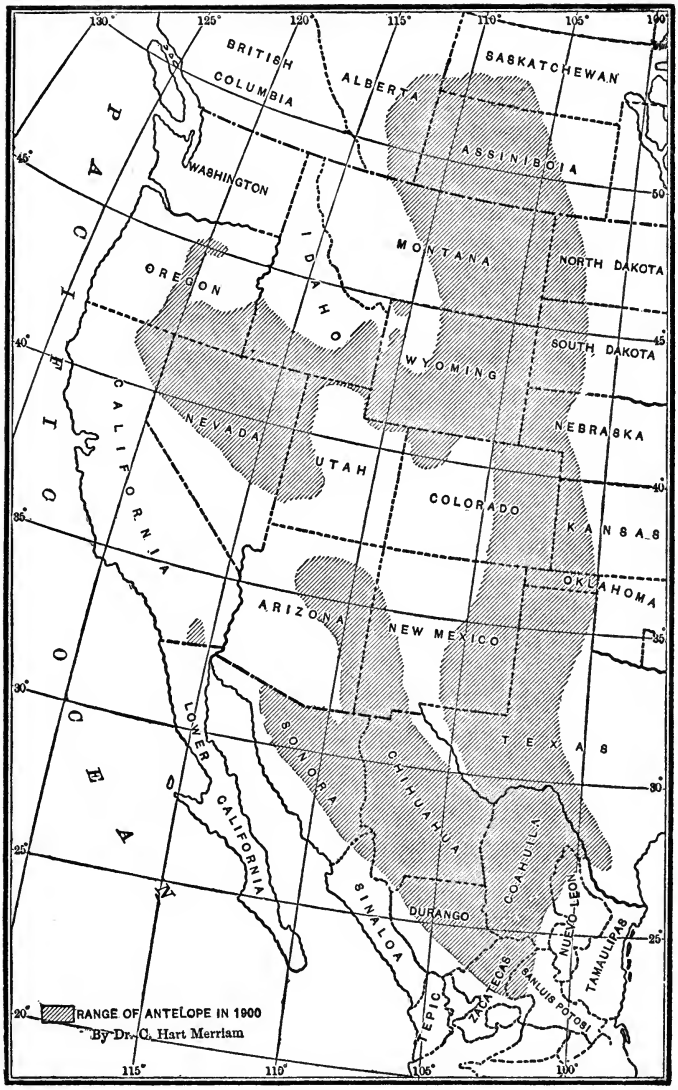
THE PRONGHORN ANTELOPE

The prongbuck or pronghorn antelope, known throughout its range simply as antelope, is a very extraordinary creature, being the only hollow-horn ruminant known which annually sheds its horns as deer do their antlers. Of course, only the horn sheaths are shed, leaving underneath the soft and bristle-haired new horn already partially formed on the bone cores. The shedding takes place in the late fall. After a few days the new horns harden, and in consequence there is only a very brief time during which any signs are left of the shedding. This is the reason why the fact was so long doubted. The hair of the antelope is very peculiar, being stiff, coarse, and springy. It is rather loosely attached to the skin, so that the hide is not valuable. When the animal is alarmed or excited it has the power of erecting all the brilliantly white hair on the rump, so as to greatly add to its already existing conspicuousness.

The prongbuck is an animal of the open plains. In the old days it was found as soon as

the westward-moving traveller left the green bottom-lands of the Mississippi, and from thence across to the dry, open valleys of California, and northward to Canada and southward into Mexico. It has everywhere been gradually thinned out, and has vanished altogether from what were formerly the extreme easterly and westerly limits of its range. In dealing with the mule-deer I have already explained how unequal the rates of extermination of the different kinds of big game have been in different localities. Each kind of big game has had its own peculiar habitat in which it throve best, and each has also been found more or less plentifully in other regions where the circumstances were less favorable; and in these comparatively unfavorable regions it early tends to disappear before the advance of man. In consequence, where the ranges of the different game animals overlap and are intertwined, one will disappear first in one locality, and another will disappear first where the conditions are different. Thus the whitetail deer had thrust forward along the very narrow river bottoms into the domain of the mule-deer and the prongbuck among the foot-hills of the Rocky Mountains, and in these places it was exterminated from the narrow strips which it inhabited long before the mule-deer vanished from the high hills, or the prongbuck from the great open plains. But along great

portions of the Missouri there are plenty of white-tails yet left in the river bottoms, while the mule-deer that once dwelt in the broken hills behind them, and the prongbuck which lived on the prairie just back of these bluffs, have both disappeared. In the same way the mule-deer and the prongbuck are often found almost intermingled through large regions in which plains, hills, and mountains alternate. If such a region is mainly mountainous, but contains a few valleys and tablelands, the prongbuck is sure to vanish from the latter before the mule-deer vanishes from the broken country. But if the region is one primarily of plains, with here and there rows of rocky hills in which the mule-deer is found, the latter is killed off long before the prongbuck can be hunted out of the great open stretches. The same is true of the pronghorn and the wapiti. The size and value of the wapiti make it an object of eager persecution on the part of hunters. But as it can live in the forest-clad fastnesses of the Rockies, into which settlement does not go, it outlasts over great regions the pronghorn, whose abode is easily penetrated by sheep and cattle men. Under anything like even conditions, however, the prongbuck, of course, outlasts the wapiti. This was the case on the Little Missouri. On that stream the bighorn also outlasted the wapiti. In 1881 wapiti were still much more plentiful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NEVADA
NEBRASKA
UTAH
COLORADO
KANSAS
CALIFORNIA
OKLAHOMA
ARIZONA
NEW MEXICO
TEXAS
SONORA
CHIHUAHUA
LOWER CALIFORNIA
COAHUILA
NUEVO LEON
TAMAULIPAS
SINALOA
DURANGO
ZACATECAS
SAN LUIS POTOSI
TEPIC
PACIFIC OCEAN
RANGE OF ANTELOPE IN 1900
By Dr. C. Hart Merriam

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than bighorns. Within the next decade they had almost totally disappeared, while the bighorn was still to be found; I shot one and saw others in 1893, at which time I had not authentic information of a single wapiti remaining anywhere on the river in my neighborhood, although it is possible that one or two still lurked in some out-of-the-way recess. In Colorado at one time the bighorn was killed out much more rapidly than the wapiti; but of late years in that state the rapidity of destruction of the latter has increased far beyond what is true in the case of the former.

I mention these facts partly because they are of interest in themselves, but chiefly because they tend to explain the widely different opinions expressed by competent observers about what seem superficially to be similar facts. It cannot be too often repeated that allowance must be made for the individual variability of the traits and characters of animals of the same species, and especially of the same species under different circumstances and in different localities; and allowance must also be made for the variability of the individual factor in the observers themselves. Many seemingly contradictory observations of the habits of deer, wapiti, and prongbuck will be found in books by the best hunters. Take such questions as the keenness of sight of the deer as compared with

the prongbuck, and of the pugnacity of the wapiti, both actual and relative, and a wide difference of opinion will be found in three such standard works as Dodge's "The Hunting-grounds of the Great West," Caton's "Deer and Antelope of America," and the contributions of Mr. Grinnell to the "Century Book of Sports." Sometimes the difference will be in mere matters of opinion, as, for instance, in the belief as to the relative worth of the sport furnished by the chase of the different creatures; but sometimes there is a direct conflict of fact. Colonel Dodge, for instance, has put it upon record that the wapiti is an exceedingly gentle animal, less dangerous than a whitetail or blacktail buck in a close encounter, and that the bulls hardly ever fight among themselves. My own experience leads me to traverse in the most emphatic manner every one of these conclusions, and all hunters whom I have met feel exactly as I do; yet no one would question for a moment Colonel Dodge's general competency as an observer. In the same way Mr. Grinnell has a high opinion of the deer's keenness of sight. Judge Caton absolutely disagrees with him, and my own experience tends to agree with that of the Judge — at least to the extent of placing the deer's vision far below that of the prongbuck and even that of the bighorn, and only on a par with that of the wapiti. Yet Mr. Grinnell is an unusually competent observer, whose opinion

on any such subject is entitled to unqualified respect.

Difference in habits may be due simply to difference of locality, or to the need of adaptation to new conditions. The prongbuck's habits about migration offer examples of the former kind of difference. Over portions of its range the prongbuck is not migratory at all. In other parts the migrations are purely local. In yet other regions the migrations are continued for great distances, immense multitudes of the animals going to and fro in the spring and fall along well-beaten tracks. I know of one place in New Mexico where the pronghorn herds are tenants of certain great plains throughout the entire year. I know another region in northwestern Colorado where the very few prongbucks still left, though they shift from valley to valley, yet spend the whole year in the same stretch of rolling, barren country. On the Little Missouri, however, during the eighties and early nineties, there was a very distinct though usually local migration. Before the Black Hills had been settled they were famous wintering places for the antelope, which swarmed from great distances to them when cold weather approached; those which had summered east of the Big Missouri actually swam the river in great herds, on their journey to the Hills. The old hunters around my ranch insisted that formerly the prongbuck had for the

most part travelled from the Little Missouri Bad Lands into the Black Hills for the winter.

When I was ranching on that river, however, this custom no longer obtained, for the Black Hills were too well settled, and the herds of prongbuck that wintered there were steadily diminishing in numbers. At that time, from 1883 to 1896, the seasonal change in habits, and shift of position, of the prongbucks were well marked. As soon as the new grass sprang they appeared in great numbers upon the plains. They were especially fond of the green, tender blades that came up where the country had been burned over. If the region had been devastated by prairie fires in the fall, the next spring it was certain to contain hundreds and thousands of prongbucks. All through the summer they remained out on these great open plains, coming to drink at the little pools in the creek beds, and living where there was no shelter of any kind. As winter approached they began to gather in bands. Some of these bands apparently had regular wintering places to the south of us, in Pretty Buttes and beyond; and close to my ranch, at the crossing of the creek called Beaver, there were certain trails which these antelope regularly travelled, northward in the spring and southward in the fall. But other bands would seek out places in the Bad Lands near by, gathering together on some succession of plateaus

which were protected by neighboring hills from the deep drifts of snow. Here they passed the winter, on short commons, it is true (they graze, not browsing like deer), but without danger of perishing in the snow-drifts. On the other hand, if the skin hunters discovered such a wintering place, they were able to butcher practically the entire band, if they so desired, as the prongbucks were always most reluctant to leave such a chosen ground.

Normally the prongbuck avoids both broken ground and timber. It is a queer animal, with keen senses, but with streaks of utter folly in its character. Time and again I have known bands rush right by me, when I happened to surprise them feeding near timber or hills, and got between them and the open plains. The animals could have escaped without the least difficulty if they had been willing to go into the broken country, or through even a few rods of trees and brush; and yet they preferred to rush madly by me at close range, in order to get out to their favorite haunts. But nowadays there are certain localities where the prongbucks spend a large part of their time in the timber or in rough, hilly country, feeding and bringing up their young in such localities.

Typically, however, the prongbuck is pre-eminently a beast of the great open plains, eating their harsh, dry pasturage, and trusting to its

own keen senses and speed for its safety. All the deer are fond of skulking; the whitetail pre-eminently so. The prongbuck, on the contrary, never endeavors to elude observation. Its sole aim is to be able to see its enemies, and it cares nothing whatever about its enemies seeing it. Its coloring is very conspicuous, and is rendered still more so by its habit of erecting the white hair on its rump. It has a very erect carriage, and when it thinks itself in danger it always endeavors to get on some crest or low hill from which it can look all about. The great bulging eyes, situated at the base of the horns, scan the horizon far and near like twin telescopes. They pick out an object at such a distance that it would entirely escape the notice of a deer. When suspicious, they have a habit of barking, uttering a sound something like "kau," and repeating it again and again, as they walk up and down, endeavoring to find out if danger lurks in the unusual object. They are extremely curious, and in the old days it was often possible to lure them toward the hunter by waving a red handkerchief to and fro on a stick, or even by lying on one's back and kicking the legs. Nowadays, however, there are very few localities indeed in which they are sufficiently unsophisticated to make it worth while trying these time-honored tricks of the long-vanished trappers and hunters.

Along the Little Missouri the fawns, sometimes one and sometimes two in number, were dropped in May or early in June. At that time the antelope were usually found in herds which the mother did not leave until she was about to give birth to the fawn. During the first few days the fawn's safety is to be found only in its not attracting attention. During this time it normally lies perfectly flat on the ground, with its head outstretched, and makes no effort to escape. While out on the spring round-up I have come across many of these fawns. Once, in company with several cowboys, I was riding behind a bunch of cattle which, as we hurried them, spread out in open order ahead of us. Happening to cast down my eyes I saw an antelope fawn directly ahead of me. The bunch of cattle had passed all around it, but it made not the slightest sign, not even when I halted, got off my pony, and took it up in my arms. It was useless to take it to camp and try to rear it, and so I speedily put it down again. Scanning the neighborhood I saw the doe hanging about some half a mile off, and when I looked back from the next divide I could see her gradually drawing near to the fawn.

If taken when very young, antelope make cunning and amusing pets, and I have often seen them around the ranches. There was one in the ranch of a Mrs. Blank who had a station on the

Deadwood stage line some eighteen years ago. She was a great worker in buckskin, and I got her to make me the buckskin shirt I still use. There was an antelope fawn that lived at the house, wandering wherever it wished; but it would not permit me to touch it. As I sat inside the house it would come in and hop up on a chair, looking at me sharply all the while. No matter how cautiously I approached, I could never put my hand upon it, as at the last moment it would spring off literally as quick as a bird would fly. One of my neighbors on the Little Missouri, Mr. Howard Eaton, had at one time upon his ranch three little antelope whose foster mother was a sheep, and who were really absurdly tame. I was fond of patting them and of giving them crusts, and the result was that they followed me about so closely that I had to be always on the lookout to see that I did not injure them. They were on excellent terms with the dogs, and were very playful. It was a comic sight to see them skipping and hopping about the old ewe when anything happened to alarm her and she started off at a clumsy waddle. Nothing could surpass the tameness of the antelope that are now under Mr. Hornaday's care at the Bronx Zoological Garden in New York. The last time that I visited the garden some repairs were being made inside the antelope enclosure, and a dozen work-

men had gone in to make them. The antelope regarded the workmen with a friendliness and curiosity untempered by the slightest touch of apprehension. When the men took off their coats the little creatures would nose them over to see if they contained anything edible, and they would come close up and watch the men plying the pick with the utmost interest. Mr. Hornaday took us inside, and they all came up in the most friendly manner. One or two of the bucks would put their heads against our legs and try to push us around, but not roughly. Mr. Hornaday told me that he was having great difficulty, exactly as with the mule-deer, in acclimatizing the antelope, especially as the food was so different from what they were accustomed to in their native haunts.

The wild fawns are able to run well a few days after they are born. They then accompany the mother everywhere. Sometimes she joins a band of others; more often she stays alone with her fawn, and perhaps one of the young of the previous year, until the rut begins. Of all game the prongbuck seems to me the most excitable during the rut. The males run the does much as do the bucks of the mule and whitetail deer. If there are no does present, I have sometimes watched a buck run to and fro by himself. The first time I saw this I was greatly interested, and could form no idea of what the buck was doing. He was by

a creek bed in a slight depression or shallow valley, and was grazing uneasily. After a little while he suddenly started and ran just as hard as he could, off in a straight direction, nearly away from me. I thought that somehow or other he had discovered my presence; but he suddenly wheeled and came back to the original place, still running at his utmost speed. Then he halted, moved about with the white hairs on his rump outspread, and again dashed off at full speed, halted, wheeled, and came back. Two or three times he did this, and let me get up very close to him before he discovered me. I was too much interested in what he was doing to desire to shoot him.

In September, sometimes not earlier than October, the big bucks begin to gather the does into harems. Each buck is then constantly on the watch to protect his harem from outsiders, and steal another doe if he can get a chance. I have seen a comparatively young buck who had appropriated a doe, hustle her hastily out of the country as soon as he saw another antelope in the neighborhood; while, on the other hand, a big buck, already with a good herd of does, will do his best to appropriate any other that comes in sight. The bucks fight fearlessly but harmlessly among themselves, locking their horns and then pushing as hard as they can.

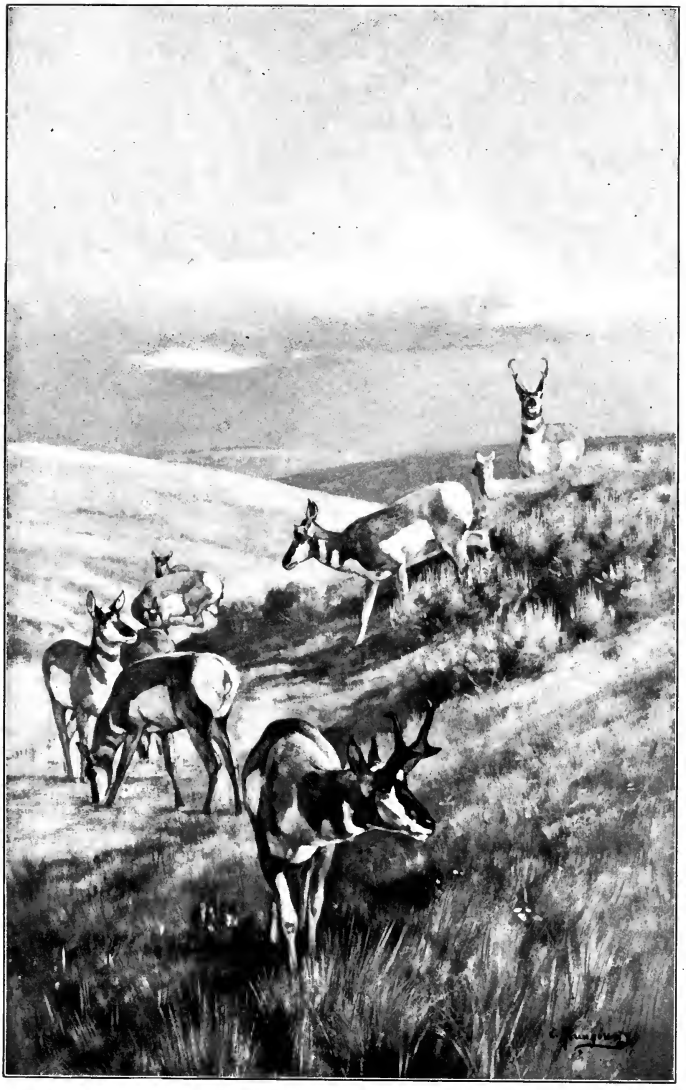
Although their horns are not very formidable

weapons, they are bold little creatures, and if given a chance will stand at bay before either hound or coyote. A doe will fight most gallantly for her fawn, and is an overmatch for a single coyote, but of course she can do but little against a large wolf. The wolves are occasionally very destructive to the herds. The cougar, however, which is a much worse foe than the wolf to deer and mountain sheep, can but rarely molest the prongbuck, owing to the nature of the latter's haunts. Eagles, on occasion, take the fawns as they do those of deer.

I have always been very fond of the chase of the prongbuck. While I lived on my ranch on the Little Missouri it was, next to the mule-deer, the game which I most often followed, and on the long wagon trips which I occasionally took from my ranch to the Black Hills, to the Big Horn Mountains, or into eastern Montana, prongbuck venison was our usual fresh meat, save when we could kill prairie-chickens and ducks with our rifles, which was not always feasible. In my mind the prongbuck is always associated with the open prairies during the spring, summer, or the early fall. It has happened that I have generally pursued the bighorn in bitter weather; and when we laid in our stock of winter meat, mule-deer was our usual game. Though I have shot prongbuck in winter, I never liked to do so, as I felt the ani-

mals were then having a sufficiently hard struggle for existence anyhow. But in the spring the meat of the prongbuck was better than that of any other game, and, moreover, there was not the least danger of mistaking the sexes, and killing a doe accidentally, and accordingly I rarely killed anything but pronghorns at that season. In those days we never got any fresh meat, whether on the ranch or while on the round-up or on a wagon trip, unless we shot it, and salt pork became a most monotonous diet after a time.

Occasionally I killed the prongbuck in a day's hunt from my ranch. If I started with the intention of prongbuck hunting, I always went on horseback; but twice I killed them on foot when I happened to run across them by accident while looking for mule-deer. I shall always remember one of these occasions. I was alone in the Elkhorn ranch-house at the time, my foreman and the only cowpuncher who was not on the round-up having driven to Medora, some forty miles away, in order to bring down the foreman's wife and sister, who were going to spend the summer with him. It was the fourth day of his absence. I expected him in the evening and wanted to have fresh meat, and so after dinner I shouldered my rifle and strolled off through the hills. It was too early in the day to expect to see anything, and my intention was simply to walk out



THE ANTELOPE AT HOME

until I was five or six miles from the ranch, and then work carefully home through a likely country toward sunset, as by this arrangement I would be in a good game region at the very time that the animals were likely to stir abroad. It was a glaring, late-spring day, and in the hot sun of mid-afternoon I had no idea that anything would be moving, and was not keeping a very sharp lookout. After an hour or two's steady tramping I came into a long, narrow valley, bare of trees and brushwood, and strolled along it, following a cattle trail that led up the middle. The hills rose steeply into a ridge crest on each side, sheer clay shoulders breaking the mat of buffalo-grass which elsewhere covered the sides of the valley as well as the bottom. It was very hot and still, and I was paying but little attention to my surroundings, when my eye caught a sudden movement on the ridge crest to my right, and, dropping on one knee as I wheeled around, I saw the head and neck of a prongbuck rising above the crest. The animal was not above a hundred yards off, and stood motionless as it stared at me. At the crack of the rifle the head disappeared; but as I sprang clear of the smoke I saw a cloud of dust rise on the other side of the ridge crest, and felt convinced that the quarry had fallen. I was right. On climbing the ridge crest I found that on the other side it sank abruptly in a low cliff of clay,

and at the foot of this, thirty feet under me, the prongbuck lay with its neck broken. After dressing it I shouldered the body entire, thinking that I should like to impress the newcomers by the sight of so tangible a proof of my hunting prowess as a whole prongbuck hanging up in the cottonwoods by the house. As it was a well-grown buck the walk home under the hot sun was one of genuine toil.

The spot where I ran across this prongbuck was miles away from the nearest plains, and it was very unusual to see one in such rough country. In fact, the occurrence was wholly exceptional; just as I once saw three bighorn rams, which usually keep to the roughest country, deliberately crossing the river bottom below my ranch, and going for half a mile through the thick cottonwood timber. Occasionally, however, parties of prongbuck came down the creek bottoms to the river. Once I struck a couple of young bucks in the bottom of a creek which led to the Chimney Butte ranch-house, and stalked them without difficulty; for prongbuck are conspicuous and make no effort to hide, and where there is good cover even their sharp eyes do not avail them. On another occasion several does and fawns, which we did not molest, spent some time on what we called "the corral bottom," which was two or three miles above the ranch-house. In

the middle of this bottom we had built a corral for better convenience in branding the calves when the round-up came near our ranch — as the bottom on which the ranch-house stood was so thickly wooded as to make it difficult to work cattle thereon. The does and fawns hung around the corral bottom for some little time, and showed themselves very curious and by no means shy.

When I went from the ranch for a day's prong-buck hunting of set purpose, I always rode a stout horse and started by dawn. The prongbucks are almost the only game that can be hunted as well during the heat of the day as at any other time. They occasionally lie down for two or three hours about noon in some hollow where they cannot be seen, but usually there is no place where they are sure they can escape observation even when resting; and when this is the case they choose a somewhat conspicuous station and trust to their own powers of observation, exactly as they do when feeding. There is therefore no necessity, as with deer, of trying to strike them at dawn or dusk. The reason why I left the ranch before sunrise and often came back long after dark was because I had to ride at least a dozen miles to get out to the ground and a dozen to get back, and if after industrious walking I failed at first to find my game, I would often take the horse again and ride for an hour or two to get into new country.

Prongbuck water once a day, often travelling great distances to or from some little pool or spring. Of course, if possible, I liked to leave the horse by such a pool or spring. On the great plains to which I used to make these excursions there was plenty of water in early spring, and it would often run, here and there, in the upper courses of some of the creeks — which, however, usually contained running water only when there had been a cloud-burst or freshet. As the season wore on the country became drier and drier. Water would remain only in an occasional deep hole, and few springs were left in which there was so much as a trickle. In a strange country I could not tell where these water-holes were, but in the neighborhood of the ranch I of course knew where I was likely to find them. Often, however, I was disappointed; and more than once after travelling many miles to where I hoped to find water, there would be nothing but sun-cracked mud, and the horse and I would have eighteen hours of thirst in consequence. A ranch horse, however, is accustomed to such incidents, and of course when a man spends half the day riding, it is merely a matter of slight inconvenience to go as long without a drink.

Nevertheless, if I did reach a spring, it turned the expedition into pleasure instead of toil. Even in the hot weather the ride toward the plains over

the hills was very lovely. It was beautiful to see the red dawn quicken from the first glimmering gray in the east, and then to watch the crimson bars glint on the tops of the fantastically shaped barren hills when the sun flamed, burning and splendid, above the horizon. In the early morning the level beams brought out into sharp relief the strangely carved and channelled cliff walls of the buttes. There was rarely a cloud to dim the serene blue of the sky. By the time the heat had grown heavy I had usually reached the spring or pool, where I unsaddled the horse, watered him, and picketed him out to graze. Then, under the hot sun I would stride off for the hunting proper. On such occasions I never went to where the prairie was absolutely flat. There were always gently rolling stretches broken by shallow water-courses, slight divides, and even low mounds, sometimes topped with strangely shaped masses of red scoria or with petrified trees. My object, of course, was, either with my unaided eyes or with the help of my glasses, to catch sight of the prongbucks before they saw me. I speedily found, by the way, that if they were too plentiful this was almost impossible. The more abundant deer are in a given locality the more apt one is to run across them, and of course if the country is sufficiently broken, the same is true of prongbucks; but where it is very flat and there are many different

bands in sight at the same time, it is practically impossible to keep out of sight of all of them, and as they are also all in sight of one another, if one flees the others are certain to take the alarm. Under such circumstances I have usually found that the only pronghorns I got were obtained by accident, so to speak; that is, by some of them unexpectedly running my way, or by my happening to come across them in some nook where I could not see them, or they me.

On ordinary occasions I found that in an exasperatingly large proportion of cases the prongbuck saw me either before or during the attempted stalk. By exercising great care, however, and worming my way under cover of every inequality, I was almost certain to get one or more chances. The shot was usually taken at least at twice the distance that would be necessary in stalking a mule-deer or a wapiti. This, of course, meant that there was a far greater chance for a miss. On the other hand, the very open nature of the country often enabled me to put in many shots, and in addition, I would frequently be tempted by pronghorns standing still and looking at me at a range where it was unlikely that I would hit them, and still entirely possible. In consequence, I found that I expended a much greater number of cartridges for every head of antelope killed than was the case in any other kind of chase. If successful, I would sling

the buck or bucks behind the saddle, keeping them in place by passing the lariat diagonally under the horse's belly from the horn of the saddle to the legs of the antelope, running it through slits in the sinews, and passing it back again to the saddle-horn; afterward repeating the operation with the legs on the other side. This arrangement renders it impossible for the carcass to shift, no matter what antics the horse may perform.

Usually, however, my pronghorn hunting has been done while I have been off with a wagon on a trip intended primarily for the chase, or else while travelling for some other purpose.

All life in the wilderness is so pleasant that the temptation is to consider each particular variety, while one is enjoying it, as better than any other. A canoe trip through the great forests, a trip with a pack-train among the mountains, a trip on snow-shoes through the silent, mysterious fairyland of the woods in winter — each has its peculiar charm. To some men the sunny monotony of the great plains is wearisome; personally there are few things I have enjoyed more than journeying over them where the game was at all plentiful. Sometimes I have gone off for three or four days alone on horseback, with a slicker or oilskin coat behind the saddle, and some salt and hardtack as my sole provisions. But for comfort on a trip of any length it was always desirable to have a wagon. My reg-

ular outfit consisted of a wagon and team driven by one man who cooked, together with another man and four riding ponies, two of which we rode, while the other two were either driven loose or led behind the wagon. While it is eminently desirable that a hunter should be able to rough it, and should be entirely willing to put up with the bare minimum of necessities, and to undergo great fatigue and hardship, it is yet not at all necessary that he should refrain from comfort of a wholesome sort when it is obtainable. By taking the wagon we could carry a tent to put up if there was foul weather. I had a change of clothes to put on if I was wet, two or three books to read — and nothing adds more to the enjoyment of a hunting trip — as well as plenty of food; while having two men made me entirely foot-loose as regards camp, so that I could hunt whenever I pleased, and, if I came in tired, I simply rested, instead of spending two or three hours in pitching camp, cooking, tethering horses, and doing the innumerable other little things which in the aggregate amount to so much.

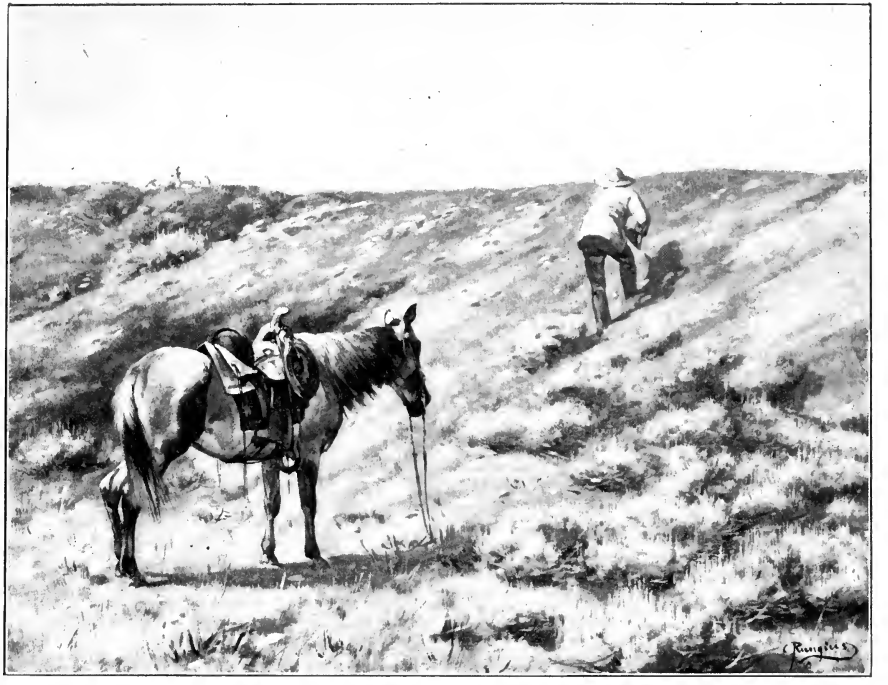
On such a trip, when we got into unknown country it was of course very necessary to stay near the wagon, especially if we had to hunt for water. But if we knew the country at all, we would decide in the morning about where the camp was to be made in the afternoon, and then

I would lope off on my own account, while the wagon lumbered slowly across the rough prairie sward straight toward its destination. Sometimes I took the spare man with me, and sometimes not. It was convenient to have him, for there are continually small emergencies in which it is well to be with a companion. For instance, if one jumps off for a sudden shot, there is always a slight possibility that any but a thoroughly trained horse will get frightened and gallop away. On some of my horses I could absolutely depend, but there were others, and very good ones too, which would on rare occasions fail me; and few things are more disheartening than a long stern chase after one's steed under such circumstances, with the unpleasant possibility of seeing him leave the country entirely and strike out for the ranch fifty or sixty miles distant. If there is a companion with one, all danger of this is over. Moreover, in galloping at full speed after the game it is impossible now and then to avoid a tumble, as the horse may put his leg into a prairie-dog hole or badger burrow, and on such occasions a companion may come in very handily. On the other hand, there is so great a charm in absolute solitude, in the wild, lonely freedom of the great plains, that often I would make some excuse and go off entirely by myself.

Such rides had a fascination of their own.

Hour after hour the wiry pony shuffled onward across the sea of short, matted grass. On every side the plains stretched seemingly limitless. Sometimes there would be no object to break the horizon; sometimes across a score of miles there would loom through the clear air the fantastic outlines of a chain of buttes, rising grim and barren. Occasionally there might be a slightly marked watercourse, every drop of moisture long dried; and usually there would not be as much as the smallest sage brush anywhere in sight. As the sun rose higher and higher the shadows of horse and rider shortened, and the beams were reflected from the short, bleached blades until in the hot air all the landscape afar off seemed to dance and waver. Often on such trips days went by without our coming across another human being, and the loneliness and vastness of the country seemed as unbroken as if the old vanished days had returned — the days of the wild wilderness wanderers, and the teeming myriads of game they followed, and the scarcely wilder savages against whom they warred.

Now and then prongbuck would appear, singly or in bands; and their sharp bark of alarm or curiosity would come to me through the still, hot air over great distances, as they stood with head erect looking at me, the white patches on their rumps shining in the sun, and the bands and



STALKING ANTELOPE

markings on their heads and necks showing as if they were in livery. Scan the country as carefully as I would, they were far more apt to see me than I was them, and once they had seen me, it was normally hopeless to expect to get them. But their strange freakishness of nature frequently offset the keenness of their senses. At least half of the prongbucks which I shot were obtained, not by stalking, but by coming across them purely through their own fault. Though the prairie seemed level, there was really a constant series of undulations, shallow and of varying width. Now and then as I topped some slight rise I would catch a glimpse of a little band of pronghorns feeding, and would slip off my horse before they could see me. A hasty determination as to where the best chance of approaching them lay would be followed by a half-hour's laborious crawl, a good part of the time flat on my face. They might discover me when I was still too far for a shot; or by taking advantage of every little inequality I might get within long range before they got a glimpse of me, and then in a reasonable proportion of cases I would bag my buck. At other times the buck would come to me. Perhaps one would suddenly appear over a divide himself, and his curiosity would cause him to stand motionless long enough to give me a shot; while on other occasions I have known one which

was out of range to linger around, shifting his position as I shifted mine, until by some sudden gallop or twist I was able to get close enough to empty my magazine at him.

When the shadows had lengthened, but before any coolness had come into the air, I would head for the appointed camping-place. Sometimes this would be on the brink of some desolate little pool under a low, treeless butte, or out on the open prairie where the only wood was what we had brought with us. At other times I would find the wagon drawn up on the edge of some shrunken plains river, under a line of great cottonwoods with splintered branches and glossy leaves that rustled all day long. Such a camp was always comfortable, for there was an abundance of wood for the fire, plenty of water, and thick feed in which the horses grazed — one or two being picketed and the others feeding loose until night came on. If I had killed a prongbuck, steaks were speedily sizzling in the frying-pan over the hot coals. If I had failed to get anything, I would often walk a mile or two down or up the river to see if I could not kill a couple of prairie-chickens or ducks. If the evening was at all cool, we built a fire as darkness fell, and sat around it, while the leaping flames lit up the trunks of the cottonwoods and gleamed on the pools of water in the half dry river bed. Then I would wrap myself

in my blanket and lie looking up at the brilliant stars until I fell asleep.

If there were many prongbuck in the locality, we might spend two or three days there, and I would hunt either on foot or on horseback. When such was the case I often went on foot, for the hunting might begin within half a mile of camp, and the less amount of ground covered was offset by the great increase in the care with which I could hunt. Every hunter remembers scores of stalks he has made, successful and unsuccessful, each marked with its own incidents. But such incidents differ slightly enough in the narration. I would usually see the animal I intended to stalk a long distance off, and would not dare to lift my head for another look until I thought I was in his neighborhood. In consequence I would sometimes find that I had crawled to the wrong place. I remember one rather ludicrous incident in connection with such a stalk. I saw a prongbuck quite half a mile off, and though I dropped at once, I was uncertain whether or not he had seen me. He was in a little hollow. A long, smoothly sloping plateau led up to one edge of it. Across this plateau I crawled, and when I was near what I thought was the edge I ventured slowly to look up, and almost immediately saw vaguely through the tops of the long grasses what I took to be the head

and horns of the buck looking in my direction. There was no use in going back, and I dropped flat on my face again and crawled another hundred yards, until it became evident I was on the rise from which the plateau sank into the little hollow beyond. Raising my head inch by inch, I caught sight of the object toward which I had been crawling, and after a moment's hesitation recognized it as a dead sunflower, the stalks and blossoms so arranged as to have a V shape. I was now completely puzzled and started to sit up, when by sheer good luck I caught sight of the real prongbuck, still feeding, some three hundred yards off, and evidently not aware of my presence. It was feeding toward a slight hill to my left, and instead of risking the long shot, I crept back out of sight until I got behind this hill, and then walked up until I got in a line with a large bunch of weeds on its shoulder. I crept on all fours to these weeds, peeped through and saw that the prongbuck was still slowly coming my way. When it was but seventy yards off I sat up and shot it.

Half a dozen times I have had prongbucks almost come into camp, while on these trips, and have shot three or four under such circumstances. When we were thus camped, so that the horse I was not riding was resting, I would often hunt the prongbuck in what is to me far the most

attractive way — that is, galloping after them on horseback. They can be killed in this fashion with greyhounds, and I once contributed two or three dogs to a scratch-pack, with which we thus killed quite a number. Any long-legged dog that could run and bite was classed for our purposes as a greyhound, and the pack consisted of true greyhounds, wire-haired Scotch staghounds, and crosses between them and between greyhounds and foxhounds. Where really good greyhounds are used for pronghorn chasing the dogs are carried in wagons until the animal is sighted; but our method was to stretch out in a long line of horsemen and dogs and beat across country, setting the dogs upon any pronghorn that started near enough by. Usually the buck got away, but sometimes, if we happened upon him very close, the dogs would seize him; and at other times we would mob him by sheer numbers, the dogs at one end of the line turning him so that before he knew where he was he had run almost into those at the other end of the line.

I enjoyed even more trying to kill pronghorn on horseback when I was alone without any dogs. On such occasions I always used either old Manitou (by far the best hunting horse I ever possessed), or else Muley, who was my favorite cutting horse when I worked on the round-up. Both were very fast and very enduring, and both,

when I jumped off and left them, would always stay in the neighborhood and permit themselves to be caught without difficulty. Both took the keenest interest in the chase, knowing what to do just as well as I did, and both would come to a dead halt the instant I pulled the reins to spring off for the shot. Manitou stayed right by me, but Muley's nerves always overcame him as I raised my rifle, and snorting violently, he would dash off for a hundred yards, wheel, and stand looking at me with absorbed interest, his ears pricked forward.

It was, of course, no use to try to run down the prongbuck in a straight-away, tail-on-end chase. My object was to take advantage of the animal's disinclination to change its course when it has once definitely determined to run toward a certain point. When they first see a mounted man, a band of pronghorns will frequently circle and wheel or run in zigzags, halt and look about them, finally making up their minds to go away in good earnest and in a definite course. When they are once thus running they dislike to abandon their course, and if a man seeks to cut them off, they will frequently refuse to swerve, simply increasing their speed so as to pass ahead of the pursuer. Taking advantage of this peculiarity I would ride at a jog-trot until I saw a band or a single animal under circumstances which I

thought favorable. After a little manœuvring to find out what the quarry was inclined to do, I would then bend off to one side, perhaps getting under cover of some low ridge. When I disappeared the pronghorns were sure to gallop toward some place where they could see me. If their gallop took them straight away from me, so that when I next saw them they were far off, I might not make any further effort after them. But frequently the next glimpse I got of them showed them much nearer than they were before, and I would then alter my course and try to go out of sight, still travelling slowly. Once out of sight, if I thought I was travelling in the right direction to get near them, I would strike a smart gallop until I again topped a ridge from which they were visible. Of course there was again the chance that they had gone in the wrong direction, but if they had not, I might find myself within range, or more likely I might see them, now running in good earnest and quartering away or toward me. Choosing my point along their line of flight, I pressed the willing horse, and away we flew as hard as we knew how. The pronghorns went faster than I did, but as I had the shorter distance to go, it frequently happened that I could cut them off, and as soon as they showed signs of swerving, or as soon as it became evident that they would pass in front of me, off I would leap

for the shot. A pronghorn is the easiest of all game to hit running, as in spite of its speed it has an exceedingly even gait, and there is of course no cover; so that if I was at all close, I would count on getting the buck before it was out of range. Where the ground was favorable I once killed three prongbucks in one day in this fashion, and very often got one or two. It is to my mind the most exhilarating way of hunting this, the true game of the plains.

CHAPTER V

THE WAPITI OR ROUND-HORNED ELK

THE wapiti is the largest and stateliest deer in the world. A full-grown bull is as big as a steer. The antlers are the most magnificent trophies yielded by any game animal of America, save the giant Alaskan moose. When full grown they are normally of twelve tines; frequently the tines are more numerous, but the increase in their number has no necessary accompaniment in increase in the size of the antlers. The length, massiveness, roughness, spread, and symmetry of the antlers must all be taken into account in rating the value of a head. Antlers over fifty inches in length are large; if over sixty, they are gigantic. Good heads are getting steadily rarer under the persecution which has thinned out the herds.

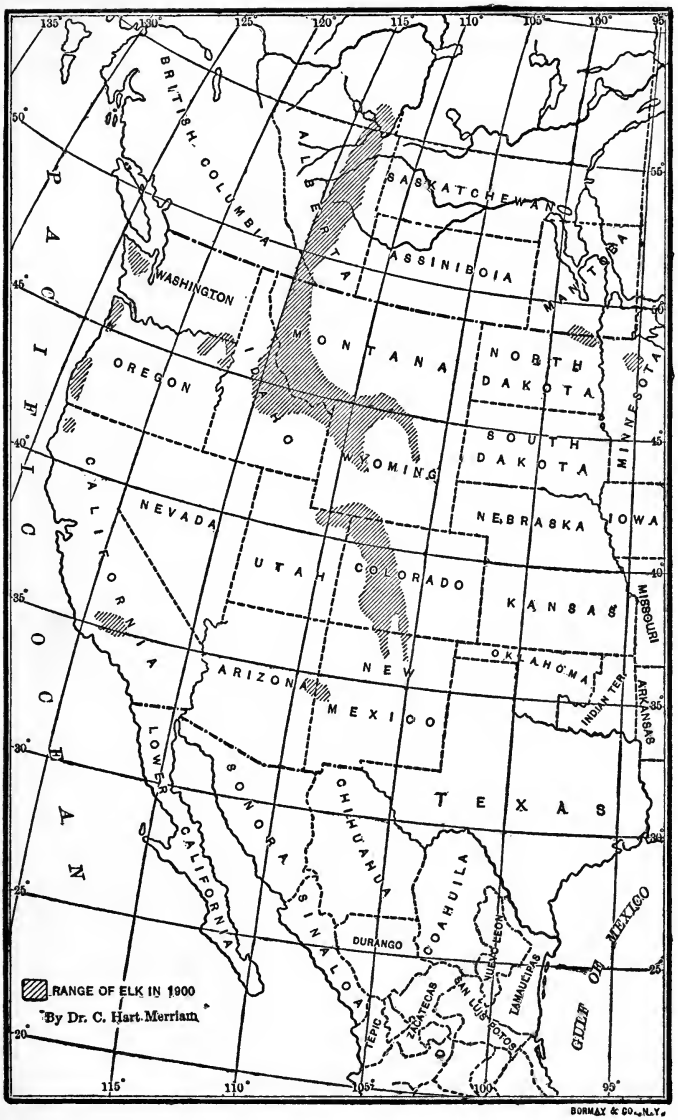
Next to the bison the wapiti is of all the big game animals of North America the one whose range has most decreased. Originally it was found from the Pacific coast east across the Alleghanies, through New York to the Adirondacks, through Pennsylvania into western New Jersey,

and far down into the mid-country of Virginia and the Carolinas. It extended northward into Canada, from the Great Lakes to Vancouver; and southward into Mexico, along the Rockies. Its range thus corresponded roughly with that of the bison, except that it went farther west and not so far north. In the early colonial days so little heed was paid by writers to the teeming myriads of game that it is difficult to trace the wapiti's distribution in the Atlantic coast region. It was certainly killed out of the Adirondacks long before the moose was exterminated. At the close of the colonial period, when the backwoodsmen were settling the valleys of the Alleghany Mountains, they there found the elk very abundant, and the stately creatures roamed in great bands over Tennessee, Kentucky, Ohio, and Indiana when the first settlers made their way into what are now these states, at the outbreak of the Revolution. These first settlers were all hunters, and they followed the wapiti (or, as they always called it, the elk) with peculiar eagerness. In consequence its numbers were soon greatly thinned, and about the beginning of the present century it disappeared from that portion of its former range lying south of the Great Lakes and between the Alleghanies and the Mississippi. In the northern Alleghanies it held its own much longer, the last individual of which I have been able to get

record having been killed in Pennsylvania in 1869. In the forests of northern Wisconsin, northern Michigan, and Minnesota wapiti existed still longer, and one or two individuals may still be found. A few are left in Manitoba. When Lewis and Clark and Pike became the pioneers among the explorers, army officers, hunters, and trappers who won for our people the great west, they found countless herds of wapiti throughout the high plains country from the Mississippi River to the Rocky Mountains. Throughout this region it was exterminated almost as rapidly as the bison, and by the early eighties there only remained a few scattered individuals, in bits of rough country such as the Black Hills, the sand-hills of Nebraska, and certain patches of Bad Lands along the Little Missouri. Doubtless, stragglers exist even yet in one or two of these localities. But by the time the great buffalo herds of the plains were completely exterminated, in 1883, the wapiti had likewise ceased to be a plains animal; the peculiar Californian form had also been well-nigh exterminated.

Disregarding the Pacific coast form of Vancouver and the Olympian Mountains, the wapiti was thenceforth a beast of the Rocky Mountain region proper, and was especially abundant in western Montana, Wyoming, and Colorado. Throughout these mountains its extermination,

though less rapid than on the plains, has nevertheless gone on with melancholy steadiness. In the early nineties it was still as abundant as ever in large regions in western Wyoming and Montana and northwestern Colorado. In northwestern Colorado the herds are now represented by only a few hundred individuals. In western Montana they are scattered over a wider region and are protected by the denser timber, but are nowhere plentiful. They have nearly vanished from the Big Horn Mountains. They are still plentiful in and around their great nursery and breeding-ground, the Yellowstone National Park. If this park can be extended so as to take in part of their winter range, they can be preserved for all time, to the delight of all lovers of nature, and to the great pecuniary benefit of the people of Wyoming and Montana. But at present their former winter range, especially south of the park, is filling up with settlers, and unless the conditions change, the wapiti will more and more be compelled to winter among the mountains, which will mean such immense losses from starvation and deep snow that the herds will be wofully thinned. Surely all men who care for nature, no less than all men who care for big game hunting, should combine to try to see that not merely the states but the Federal authorities make every effort, and are given every power, to prevent the


RANGE OF ELK IN 1900
By Dr. C. Hart Merriam
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
ASSINIBOIA
MANITOBA
WASHINGTON
MONTANA
NORTH DAKOTA
OREGON
IDAHO
WYOMING
SOUTH DAKOTA
MINNESOTA
NEVADA
NEBRASKA
IOWA
UTAH
COLORADO
KANSAS
MISSOURI
CALIFORNIA
OKLAHOMA
INDIAN TER.
ARKANSAS
ARIZONA
NEW MEXICO
TEXAS
LOWER CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
DURANGO
SINALOA
NUEVO LEON
TAMAULIPAS
ZACATECAS
SAN LUIS POTOSI
TEPIC
GULF OF MEXICO
PACIFIC OCEAN
BORMAX & CO., N.Y.

extermination of this stately and beautiful animal, the lordliest of the deer kind in the entire world.

The wapiti, like the bison, and even more than the whitetail deer, can thrive in widely varying surroundings. It is at home among the high mountains, in the deep forests, and on the treeless, level plains. It is rather omnivorous in its tastes, browsing and grazing on all kinds of trees, shrubs, and grasses. These traits, and its hardihood, make it comparatively easy to perpetuate in big parks and forest preserves in a semi-wild condition; and it has thriven in such preserves and parks in many of the eastern states. As it does not, by preference, dwell in such tangled forests as are the delight of the moose and the whitetail deer, it vanishes much quicker than either when settlers appear in the land. In the mountains and foot-hills its habitat is much the same as that of the mule-deer, the two animals being often found in the immediate neighborhood of each other. In such places the superior size and value of the wapiti put it at a disadvantage in the keen struggle for life, and when the rifle-bearing hunter appears upon the scene, it vanishes long before its smaller kinsman.

Moreover, the wapiti is undoubtedly subject to queer freaks of panic stupidity, or what seems like a mixture of tameness and of puzzled terror. At these times a herd will remain almost motion-

less, the individuals walking undecidedly to and fro, and neither flinching nor giving any other sign even when hit with a bullet. In the old days it was not uncommon for a professional hunter to destroy an entire herd of wapiti when one of these fits of confusion was on them. Even nowadays they sometimes behave in this way. In 1897, Mr. Ansley Wilcox, of Buffalo, was hunting in the Teton basin. He came across a small herd of wapiti, the first he had ever seen, and opened fire when a hundred and fifty yards distant. They paid no heed to the shots, and after taking three or four at one bull, with seemingly no effect, he ran in closer and emptied his magazine at another, also seemingly without effect, before the herd slowly disappeared. After a few rods, both bulls fell; and on examination it was found that all nine bullets had hit them.

To my mind, the venison of the wapiti is, on the whole, better than that of any other wild game, though its fat when cooled at once hardens, like mutton tallow.

In its life habits the wapiti differs somewhat from its smaller relatives. It is far more gregarious, and is highly polygamous. During the spring, while the bulls are growing their great antlers, and while the cows have very young calves, both bulls and cows live alone, each individual for itself. At such time each seeks the

most secluded situation, often going very high up on the mountains. Occasionally a couple of bulls lie together, moving around as little as possible. The cow at this time realizes that her calf's chance of life depends upon her absolute seclusion, and avoids all observation.

As the horns begin to harden the bulls thrash the velvet off against quaking asp, or ash, or even young spruce, splintering and battering the bushes and small trees. The cows and calves begin to assemble; the bulls seek them. But the bulls do not run the cows as among the smaller deer the bucks run the does. The time of the beginning of the rut varies in different places, but it usually takes place in September, about a month earlier than that of the deer in the same locality. The necks of the bulls swell and they challenge incessantly, for unlike the smaller deer they are very noisy. Their love and war calls, when heard at a little distance, amid the mountains, have a most musical sound. Frontiersmen usually speak of their call as "whistling," which is not a very appropriate term. The call may be given in a treble or in a bass, but usually consists of two or three bars, first rising and then falling, followed by a succession of grunts. The grunts can only be heard when close up. There can be no grander or more attractive chorus than the challenging of a number of wapiti bulls when two

great herds happen to approach one another under the moonlight or in the early dawn. The pealing notes echo through the dark valleys as if from silver bugles, and the air is filled with the wild music. Where little molested the wapiti challenge all day long.

They can be easiest hunted during the rut, the hunter placing them, and working up to them, by the sound alone. The bulls are excessively truculent and pugnacious. Each big one gathers a herd of cows about him and drives all possible rivals away from his immediate neighborhood, although sometimes spike bulls are allowed to remain with the herd. Where wapiti are very abundant, however, many of these herds may join together and become partially welded into a mass that may contain thousands of animals. In the old days such huge herds were far from uncommon, especially during the migrations; but nowadays there only remain one or two localities in which wapiti are sufficiently plentiful ever to come together in bands of any size. The bulls are incessantly challenging and fighting one another, and driving around the cows and calves. Each keeps the most jealous watch over his own harem, treating its members with great brutality; and is selfishly indifferent to their fate the instant he thinks his own life in jeopardy. During the rut the erotic manifestations of the bull are extraordinary.

One or two fawns are born, about May. In the mountains the cow usually goes high up to bring forth her fawn. Personally I have only had a chance to observe the wapiti in the spring in the neighborhood of my ranch in the Bad Lands of the Little Missouri. Here the cow invariably selected some wild lonely bit of very broken country in which there were dense thickets and some water. There was one such patch some fifteen miles from my ranch, in which for many years wapiti regularly bred. The breeding cow lay by herself, although sometimes the young of the preceding year would lurk in the neighborhood. For the first few days the calf seemed not to leave the bed, and would not move even when handled. Then it began to follow the mother. In this particular region the grass was coarse and rank, save for a few patches in the immediate neighborhood of little alkali springs. Accordingly, it was not much visited by the cattle or by the cowboys. Doubtless in the happier days of the past, when man was merely an infrequent interloper, the wapiti cows had made their nurseries in pleasanter and more fruitful valleys. But in my time the hunted creatures had learned that their only chance was to escape observation. I have known not only cows with young calves, but cows when the calves were out of the spotted coat, and even yearlings, to try to escape by hiding — the great

beasts lying like rabbits in some patch of thick brush, while I rode close by. The best hunting horse I ever had, old Manitou, in addition to his other useful qualities, would serve as a guard on such occasions. I would leave him on a little hillock to one side of such a patch of brush, and as he walked slowly about, grazing and rattling his bridle chains, he would prevent the wapiti breaking cover on that side, and give me an additional chance of slipping around toward them — although, if the animal was a cow, I never molested it unless in dire need of meat.

Most of my elk hunting was done among the stupendous mountain masses of the Rockies, which I usually reached after a long journey, with wagon- or pack-train, over the desolate plains. Ordinarily I planned to get to the hunting-ground by the end of August, so as to have ample time. By that date the calves were out of the spotted coat, the cows and the young of the preceding year had banded, and the big bulls had come down to join them from the remote recesses in which they had been lying, solitary or in couples, while their antlers were growing. Many bulls were found alone, or, if young, in small parties; but the normal arrangement was for each big bull to have his own harem, around the outskirts of which there were to be found lurking occasional spike bulls who were always venturing too near and being chased off

by the master bull. Frequently several such herds joined together into a great band. Before the season was fairly on, when the bulls had not been worked into actual frenzy, there was not much fighting in these bands. Later they were the scenes of desperate combats. Each master bull strove to keep his harem under his own eyes, and was always threatening and fighting the other master bulls, as well as those bulls whose prowess had proved insufficient hitherto to gain them a band, or who after having gained one had been so exhausted and weakened as to succumb to some new aspirant for the leadership. The bulls were calling and challenging all the time, and there was ceaseless turmoil, owing to their fights and their driving the cows around. The cows were more wary than the bulls, and there were so many keen noses and fairly good eyes that it was difficult to approach a herd; whereas the single bulls were so noisy, careless, and excited that it was comparatively easy to stalk them. A rutting wapiti bull is as wicked looking a creature as can be imagined, swaggering among the cows and threatening the young bulls, his jaws mouthing and working in a kind of ugly leer.

The bulls fight desperately with one another. The two combatants come together with a resounding clash of antlers, and then push and strain with their mouths open. The skin on

their neck and shoulders is so thick and tough that the great prongs cannot get through or do more than inflict bruises. The only danger comes when the beaten party turns to flee. The victor pursues at full speed. Usually the beaten one gets off; but if by any accident he is caught where he cannot escape, he is very apt to be gored in the flank and killed. Mr. Baillie-Grohman has given a very interesting description of one such fatal duel of which he was an eye-witness on a moonlight night in the mountains. I have never known of the bull trying to protect the cow from any enemy. He battles for her against rivals with intense ferocity; but his attitude toward her, once she is gained, is either that of brutality or of indifference. She will fight for her calf against any enemy which she thinks she has a chance of conquering, although of course not against man. But the bull leaves his family to their fate the minute he thinks there is any real danger. During the rut he is greatly excited, and does not fear a dog or a single wolf, and may join with the rest of the herd of both sexes in trying to chase off one or the other, should he become aware of its approach. But if there is serious danger, his only thought is for himself, and he has no compunctions about sacrificing any of his family. When on the move a cow almost always goes first, while the bull brings up the rear.

In domestication the bulls are very dangerous to human beings, and will kill a man at once if they can get him at a disadvantage; but in a state of nature they very rarely indeed overcome their abject terror of humanity, even when wounded and cornered. Of course, if the man comes straight up to him where he cannot get away, a wapiti will fight as, under like circumstances, a blacktail or whitetail will fight, and equally, of course, he is then far more dangerous than his smaller kinsfolk; but he is not nearly so apt to charge as a bull moose. I have never known but two authentic instances of their thus charging. One happened to a hunter named Bennett on the Little Missouri; the other to a gentleman I met, a doctor, in Meeker, Colorado. The doctor had wounded his wapiti, and as it was in the late fall, followed him easily in the snow. Finally, he came upon the wapiti standing where the snow was very deep at the bottom of a small valley, and on his approach the wapiti deliberately started to break his way through the snow toward him, and had almost reached him when he was killed. But for every one such instance of a wapiti's charging there are a hundred in which a bull moose has charged. Senator Redfield Proctor was charged most resolutely by a mortally hurt bull moose which fell in the death throes just before reaching him; and I could cite case after case of the kind.

The wapiti's natural gaits are a walk and a trot. It walks very fast indeed, especially if travelling to reach some given point. More than once I have sought to overtake a travelling bull, and have found myself absolutely unable to do so, although it never broke its walk. Of course, if I had not been obliged to pay any heed to cover or wind, I could have run up on it; but the necessity for paying heed to both handicapped me so that I was actually unable to come up to the quarry as it swung steadily on through woodland and open, over rough ground and smooth. Wapiti have a slashing trot, which they can keep up for an indefinite time and over any kind of country. Only a good pony can overtake them when they have had any start and have got settled into this trot. If much startled they break into a gallop — the young being always much more willing to gallop than the old. Their gallop is very fast, especially down hill. But they speedily tire under it. A yearling or a two-year-old can keep it up for a couple of miles. A heavy old bull will be done out after a few hundred yards. I once saw a band of wapiti frightened into a gallop down a steep incline where there were also a couple of mule-deer. I had not supposed that wapiti ran as fast as mule-deer, but this particular band actually passed the deer, though the latter were evidently doing their best; the wapiti were well ahead when,

after thundering down the steep, broken incline, they all disappeared into a belt of woodland. In spite of their size, wapiti climb well and go surefootedly over difficult and dangerous ground. They have a habit of coming out to the edges of cliffs, or on mountain spurs, and looking over the landscape beneath, almost as though they enjoyed the scenery. What their real object is on such occasions I do not know.

The nose of the wapiti is very keen. Its sight is much inferior to that of the antelope, but about as good as a deer's. Its hearing is also much like that of a deer. When in country where it is little molested, it feeds and moves about freely by day, lying down to rest at intervals, like cattle. Wapiti offer especial attractions to the hunter, and next to the bison are more quickly exterminated than any other kind of game. Only the fact that they possess a far wider range of habitat than either the mule-deer, the prongbuck, or the moose, has enabled them still to exist. Their gregariousness is also against them. Even after the rut the herds continue together until in mid spring the bulls shed their antlers — for they keep their antlers at least two months longer than deer. During the fall, winter, and early spring wapiti are roving, restless creatures. Their habit of migration varies with locality, as among mule-deer. Along the Little Missouri, as in the plains

country generally, there was no well-defined migration. Up to the early eighties, when wapiti was still plentiful, the bands wandered far and wide; but fitfully and irregularly, wholly without regard to the season, save that they were stationary from May to August. After 1883 there were but a few individuals left, although as late as 1886 I once came across a herd of nine. These surviving individuals had learned caution. The bulls only called by night, and not very frequently then, and they spent the entire year in the roughest and most out-of-the-way places, having the same range both winter and summer. They selected tracts where the ground was very broken and there was much shrubbery, and patches of small trees. This tree and bush growth gave them both shelter and food; for they are particularly fond of browsing on the leaves and tender twig ends, though they also eat weeds and grass.

Wherever wapiti dwell among the mountains they make regular seasonal migrations. In northwestern Wyoming they spend the summer in the Yellowstone National Park, but in winter they go south to Jackson's Hole, and used formerly, also, to move out of the park to the northeast. In northwestern Colorado their migrations followed much the same line as those of the mule-deer. In different localities the length of the migration and even the time differed. There

were some places where the shift was simply from the high mountains down to their foot-hills. In other places great herds travelled a couple of hundred miles, so that localities absolutely barren one month would be swarming with wapiti the next. In some places the shift took place as early as the month of August; in others not until after the rut, in October or even November; and in some places the rut took place during the migration.

No chase is more fascinating than that of the wapiti. In the old days, when the mighty antlered beasts were found upon the open plains, they could be followed upon horseback, with or without hounds. Nowadays, when they dwell in the mountains, they are to be killed only by the rifle-bearing still-hunter. Needless butchery of any kind of animal is repulsive, but in the case of the wapiti it is little short of criminal. He is the grandest of the deer kind throughout the world, and he has already vanished from most of the places where he once dwelt in his pride. Every true sportsman should feel it incumbent upon him to do all in his power to preserve so noble a beast of the chase from extinction. No harm whatever comes to the species from killing a certain number of bulls; but an excessive number should never be killed, and no cow or calf should under any circumstances be touched.

Formerly, when wapiti were plentiful, it would have been folly for hunters and settlers in the unexplored wilderness not to kill wild game for their meat, and occasionally a cow or a calf had to be thus slain; but there is no excuse nowadays for a hunting party killing anything but a full-grown bull.

In a civilized and cultivated country wild animals only continue to exist at all when preserved by sportsmen. The excellent people who protest against all hunting, and consider sportsmen as enemies of wild life, are wholly ignorant of the fact that in reality the genuine sportsman is by all odds the most important factor in keeping wild creatures from total extermination. Of course, if wild animals were allowed to breed unchecked, they would, in an incredibly short space of time, render any country uninhabitable by man, — a fact which ought to be a matter of elementary knowledge in any community where the average intelligence is above that of certain portions of Hindoostan. Equally, of course, in a purely utilitarian community all wild animals are exterminated out of hand. In order to preserve the wild life of the wilderness at all, some middle ground must be found between brutal and senseless slaughter and the unhealthy sentimentalism which would just as surely defeat its own end by bringing about the eventual total extinction of the game.

It is impossible to preserve the larger wild animals in regions thoroughly fit for agriculture; and it is perhaps too much to hope that the larger carnivors can be preserved for merely æsthetic reasons. But throughout our country there are great regions entirely unsuited for agriculture where, if the people only have foresight, they can, through the power of the state, keep the game in perpetuity. There is no hope of preserving the bison permanently, save in great private parks; but all other game, including not merely deer, but the pronghorn, the splendid bighorn, and the stately and beautiful wapiti, can be kept on the public lands, if only the proper laws are passed, and if only these laws are properly enforced. I suppose that no lover of nature who travels through Switzerland does not regret that the ibex has vanished from among the Swiss mountains; and every good American ought to endeavor to see to it that for ages to come such a fate does not befall the bighorn and the wapiti in the Rockies.

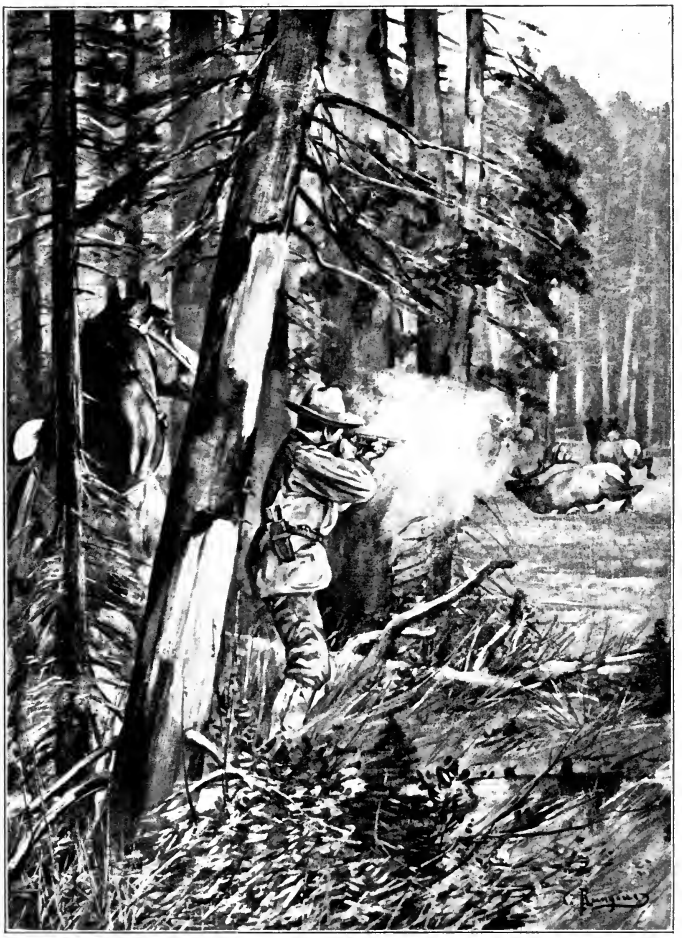
A peculiar charm in the chase of the wapiti comes from the wild beauty of the country in which it dwells. The moose lives in marshy forests; if one would seek the white goat or caribou of the northern Rockies, he must travel on foot, pack on back; while the successful chase of the bighorn, perhaps on the whole the manliest of

all our sports, means heart-breaking fatigue for any but the strongest and hardiest. The prong-buck, again, must be followed on the desolate, sun-scorched plains. But the wapiti dwells amid lofty, pine-clad mountains, in a region of lakes and streams. A man can travel in comfort while hunting it, because he can almost always take a pack-train with him, and the country is usually sufficiently open to enable the hunter to enjoy all the charm of distant landscapes. Where the wapiti lives the spotted trout swarm in the brooks, and the wood-grouse fly upward to perch among the tree-tops as the hunter passes them. When hunting him there is always sweet cold water to be drunk at night, and beds of aromatic fir boughs on which to sleep, with the blankets drawn over one to keep out the touch of the frost. He must be followed on foot, and the man who follows him must be sound in limb and wind. But his pursuit does not normally mean such wearing exhaustion as is entailed by climbing cliffs all day long after the white goat. Whoever has hunted the wapiti, as he looks at his trophies, will always think of the great mountains with the snow lying in the rifts in their sides; of the splashing murmur of rock-choked torrents; of the odorous breath of the pine branches; of tents pitched in open glades; of long walks through cool open forests; and of great camp-fires, where the

pitchy stumps flame like giant torches in the darkness.

In the old days, of course, much of the hunting was done on the open plains or among low, rugged hills. The wapiti that I shot when living at my Little Missouri ranch were killed under exactly the same conditions as mule-deer. When I built my ranch-house wapiti were still not uncommon, and their shed antlers were very numerous both on the bottoms and in places among the hills. There was one such place a couple of miles from my ranch in a stretch of comparatively barren but very broken hill-country in which there were many score of these shed antlers. Evidently a few years before this had been a great gathering-place for wapiti toward the end of winter. My ranch itself derived its name "The Elkhorn" from the fact that on the ground where we built it were found the skulls and interlocked antlers of two wapiti bulls who had perished from getting their antlers fastened in a battle. I never, however, killed a wapiti while on a day's hunt from the ranch itself. Those that I killed were obtained on regular expeditions, when I took the wagon and drove off to spend a night or two on ground too far for me to hunt it through in a single day from the ranch. Moreover, the wapiti on the Little Missouri had been so hunted that they had entirely abandoned the diurnal habits of their

kind, and it was a great advantage to get on the ground early. This hunting was not carried on amid the glorious mountain scenery which marks the home of the wapiti in the Rockies; but the surroundings had a charm of their own. All really wild scenery is attractive. The true hunter, the true lover of the wilderness, loves all parts of the wilderness, just as the true lover of nature loves all seasons. There is no season of the year when the country is not more attractive than the city; and there is no portion of the wilderness, where game is found, in which it is not a keen pleasure to hunt. Perhaps no other kind of country quite equals that where snow lies on the lofty mountain peaks, where there are many open glades in the pine forests, and clear mountain lakes, and rushing trout-filled torrents. But the fantastic desolation of the Bad Lands, and the endless sweep of the brown prairies, alike have their fascination for the true lover of nature and lover of the wilderness who goes through them on foot or on horseback. As for the broken hill-country in which I followed the wapiti and the mule-deer along the Little Missouri, it would be strange indeed if any one found it otherwise than attractive in the bright, sharp, fall weather. Long, grassy valleys wound among the boldly shaped hills. The basins were filled with wind-beaten trees and brush which generally also ran along-



A SHOT AT ELK

side of the dry watercourses down the middle of each valley. Cedars clustered in the sheer ravines, and here and there groups of elm and ash grew to a considerable height in the more sheltered places. At the first touch of the frost the foliage turned russet or yellow — the Virginia creepers crimson. Under the cloudless blue sky the air was fresh and cool, and as we lay by the camp-fire at night the stars shone with extraordinary brilliancy. Under such conditions the actual chase of the wapiti was much like that of the mule-deer. They had been so hunted that they showed none of the foolish traits which they are prone to exhibit when bands are found in regions where they have been little persecuted; and they were easier to kill than mule-deer simply because they were more readily tracked and more readily seen, and offered a larger, and on the whole a steadier, mark at which to shoot. When a small band had visited a pool their tracks could be identified at once, because in the soft ground the flexible feet spread and yielded so as to leave the marks of the false hoofs. On ordinary ground it was very difficult to tell their footprints from those of the yearling and two-year-old ranch cattle.

But the mountains are the true ground for the wapiti. Here he must be hunted on foot, and nowadays, since he has grown wiser, skill and patience, and the capacity to endure fatigue

and exposure must be shown by the successful hunter. My own wapiti hunting has been done in September and early October during the height of the rut, and therefore at a time when the conditions were most favorable for the hunter. I have hunted them in many places throughout the Rockies, from the Big Horn in western Wyoming to the Big Hole Basin in western Montana, close to the Idaho line. Where I hunted, the wapiti were always very noisy both by day and by night, and at least half of the bulls that I killed attracted my attention by their calling before I saw either them or their tracks. At night they frequently passed close to camp, or came nearly up to the picketed horses, challenging all the time; more than once I slipped out, hoping to kill one by moonlight, but I never succeeded. Occasionally, when they were plentiful, and were restless and always roving about, I simply sat still on a log, until one gave me a chance. Sometimes I came across them while hunting through likely localities, going up or across wind, keeping the sharpest lookout, and moving with great care and caution, until I happened to strike the animals I was after. More than once I took the trail of a band, when out with some first-class woodsman, and after much running, dodging, and slipping through the timber, overtook the animals — though usu-

ally when thus merely following the trail I failed to come up with them. On two different occasions I followed and came up to bands, attracted by their scent. Wapiti have a strong, and, on the whole, pleasing scent, like that of Alderney cattle; although in old bulls it becomes offensively strong. This scent is very penetrating. I once smelt a herd which was lying quite still taking its noonday siesta, certainly half a mile to the windward of me; and creeping up I shot a good bull as he lay. On another occasion, while working through the tangled trees and underbrush at the bottom of a little winding valley, I suddenly smelt wapiti ahead, and without paying any further attention to the search for tracks, I hunted cautiously up the valley, and when it forked was able to decide by the smell alone which way the wapiti had gone. He was going up wind ahead of me, and his ground-covering walk kept me at a trot in order to overtake him. Finally I saw him, before he saw me, and then, by making a run to one side, got a shot at him when he broke cover, and dropped him.

It is exciting to creep up to a calling wapiti. If it is a solitary bull he is apt to be travelling, seeking the cows, or on the lookout for some rival of weaker thews. Under such circumstances, only hard running will enable the hunter to over-

take him, unless there is a chance to cut him off. If, however, he hears another bull, or has a herd under him, the chances are that he is nearly stationary, or at least is moving slowly, and the hunter has every opportunity to approach. In a herd the bull himself is usually so absorbed both with his cows and with his rivals that he is not at all apt to discover the approaching hunter. The cows, however, are thoroughly awake, and it is their eyes and keen noses for which the hunter must look out. A solitary bull which is answering the challenge of another is the easiest of all to approach. Of course, if there has been much hunting, even such a bull is wary and is on the lookout for harm. But in remote localities he becomes so absorbed in finding out the whereabouts of his rival, and he is so busy answering the latter's challenges and going through motions of defiance, that with proper care it is comparatively easy to approach him. Once, when within seventy yards of such a bull, he partly made me out, and started toward me. Evidently he could not tell exactly what I was, — my buckskin shirt probably helping to puzzle him, — and in his anger and eagerness he did not think of danger until it was too late. On another occasion I got up to two bulls that were fighting, and killed both. In the fights, weight of body seems to count for more than size of antlers.

Once I spent the better part of a day in following a wapiti bull before I finally got him. Generally when hunting wapiti I have been with either one of my men from the ranch or a hunter like Tazewell Woody, or John Willis. On this particular occasion, however, I happened to be alone; and though I have rarely been as successful alone as when in the company of some thoroughly trained and experienced plainsman or mountain-man, yet when success does come under such circumstances, it is always a matter of peculiar pride.

At the time, I was camped in a very beautiful valley high among the mountains which divide southwestern Montana from Idaho. The weather was cold, and there were a couple of inches of snow on the ground, so that the conditions were very favorable for tracking and stalking. The country was well wooded, but the forest was not dense, and there were many open glades. Early one morning, just about dawn, the cook, who had been up for a few minutes, waked me, to say that a bull wapiti was calling not far off. I rolled out of my bed and was dressed in short order. The bull had by this time passed the camp, and was travelling toward a range of mountains on the other side of the stream which ran down the valley bottom. He was evidently not alarmed, for he was still challenging. I gulped down a cup of

hot coffee, munched a piece of hardtack, and thrust four or five other pieces and a cold elk tongue into my hunting-shirt, and then, as it had grown light enough to travel, started after the wapiti. I supposed that in a few minutes I should either have overtaken him or abandoned the pursuit, and I took the food with me simply because in the wilderness it never pays to be unprepared for emergencies. The wisdom of such a course was shown in this instance by the fact that I did not see camp again until long after dark.

I at first tried to cut off the wapiti by trotting through the woods toward the pass for which I supposed he was headed. The morning was cold, and, as always happens at the outset when one starts to take violent exercise under such circumstances, the running caused me to break into a violent perspiration; so that the first time I stopped to listen for the wapiti a regular fog rose over my glasses and then froze on them. I could not see a thing, and after wiping them found I had to keep gently moving in order to prevent them from clouding over again. It is on such cold mornings, or else in very rainy weather, that the man who has not been gifted with good eyes is most sensible of his limitations. I once lost a caribou which I had been following at speed over the snow because when I came into

sight and halted the moisture instantly formed and froze on my glasses so that I could not see anything, and before I got them clear the game had vanished. Whatever happened, I was bound that I should not lose this wapiti from a similar accident.

However, when I next heard him he had evidently changed his course and was going straight away from me. The sun had now risen, and following after him I soon found his tracks. He was walking forward with the regular wapiti stride, and I made up my mind I had a long chase ahead of me. We were going up hill, and though I walked hard, I did not trot until we topped the crest. Then I jogged along at a good gait, and as I had on moccasins, and the woods were open, I did not have to exercise much caution. Accordingly, I gained, and felt I was about to come up with him, when the wind brought down from very far off another challenge. My bull heard it before I did, and instantly started toward the spot at a trot. There was not the slightest use of my attempting to keep up with this, and I settled down into a walk. Half an hour afterward I came over a slight crest, and immediately saw a herd of wapiti ahead of me, across the valley and on an open hillside. The herd was in commotion, the master bull whistling vigorously and rounding up his cows, evidently

much excited at the new bull having approached. There were two or three yearlings and two-year-old bulls on the outskirts of the herd, and the master bull, whose temper had evidently not been improved by the coming of the stranger, charged these and sent them rattling off through the bushes. The ground was so open between me and them that I dared not venture across it, and I was forced to lie still and await developments. The bull I had been following and the herd bull kept challenging vigorously, but the former probably recognized in the latter a heavier animal, and could not rouse his courage to the point of actually approaching and doing battle. It by no means follows that the animal with the heaviest body has the best antlers, but the hesitation thus shown by the bull I was following made me feel that the other would probably yield the most valuable trophies, and after a couple of hours I made up my mind to try to get near the herd, abandoning the animal I had been after.

The herd showed but little symptoms of moving, the cows when let alone scattering out to graze, and some of them even lying down. Accordingly, I did not hurry myself, and spent considerably over an hour in slipping off to the right and approaching through a belt of small firs. Unfortunately, however, the wind had slightly

shifted, and while I was out of sight of the herd they had also come down toward the spot from whence I had been watching them. Accordingly, just as I was beginning to creep forward with the utmost caution, expecting to see them at any moment, I heard a thumping and cracking of branches that showed they were on the run. With wapiti there is always a chance of overtaking them after they have first started, because they tack and veer and halt to look around. Accordingly I ran forward as fast as I could through the woods; but when I came to the edge of the fir belt I saw that the herd were several hundred yards off. They were clustered together and looking back, and saw me at once.

Off they started again. The old bull, however, had neither seen me nor smelt me, and when I heard his whistle of rage I knew he had misinterpreted the reason for the departure of his cows, and in another moment he came in sight, evidently bent on rounding them up. On his way he attacked and drove off one of the yearlings, and then took after the cows, while the yearling ran toward the outlying bull. The latter evidently failed to understand what had happened; at least he showed no signs of alarm. Neither, however, did he attempt to follow the fleeing herd, but started off again on his own line.

I was sure the herd would not stop for some miles, and accordingly I resumed my chase of the single bull. He walked for certainly three miles before he again halted, and I was then half a mile behind him. On this occasion he struck a small belt of woodland and began to travel to and fro through it, probably with an idea of lying down. I was able to get up fairly close by crawling on all fours through the snow for part of the distance; but just as I was about to fire he moved slightly, and though my shot hit him, it went a little too far back. He plunged over the hill crest and was off at a gallop, and after running forward and failing to overtake him in the first rush, I sat down to consider matters. The snow had begun to melt under the sun, and my knees and the lower parts of my sleeves were wet from my crawl, and I was tired and hungry and very angry at having failed to kill the wapiti. It was, however, early in the afternoon, and I thought that if I let the wapiti alone for an hour, he would lie down, and then grow stiff and reluctant to get up; while in the snow I was sure I could easily follow his tracks. Therefore I ate my lunch and then swallowed some mouthfuls of snow in lieu of drinking.

An hour afterward I took up the trail. It was evident the bull was hard hit, but even after he had changed his plunging gallop for a trot he

showed no signs of stopping; fortunately his trail did not cross any other. The blood signs grew infrequent, and two or three times he went up places which made it difficult for me to believe he was much hurt. At last, however, I came to where he had lain down; but he had risen again and gone forward. For a moment I feared that my approach had alarmed him, but this was evidently not the case, for he was now walking. I left the trail, and turning to one side below the wind I took a long circle and again struck back to the bottom of the valley down which the wapiti had been travelling. The timber here was quite thick, and I moved very cautiously, continually halting and listening, for five or ten minutes. Not a sound did I hear, and I crossed the valley bottom and began to ascend the other side without finding the trail. Unless he had turned off up the mountains I knew that this meant he must have lain down; so I retraced my steps and with extreme caution began to make my way up the valley. Finally I came to a little opening, and after peering about for five minutes I stepped forward, and instantly heard a struggling and crashing in a clump of young spruce on the other side. It was the wapiti trying to get on his feet. I ran forward at my best pace, and as he was stiff and slow in his movements I was within seventy yards before he got fairly under

way. Dropping on one knee I fired and hit him in the flank. At the moment I could not tell whether or not I had missed him, for he gave no sign; but, running forward very fast, I speedily saw him standing with his head down. He heard me and again started, but at the third bullet down he went in his tracks, the antlers clattering loudly on the branches of a dead tree.

The snow was melting fast, and for fear it might go off entirely, so that I could not follow my back track, I went up the hillside upon which the wapiti lay, and taking a dead tree dragged it down to the bottom, leaving a long furrow. I then repeated the operation on the opposite hillside, thus making a trace which it was impossible for any one coming up or down the valley to overlook; and having conned certain landmarks by which the valley itself could be identified, I struck toward camp at a round trot; for I knew that if I did not get into the valley where the tent lay before dark, I should have to pass the night out. However, the last uncertain light of dusk just enabled me to get over a spur from which I could catch a glimpse of the camp-fire, and as I stumbled toward it through the forest I heard a couple of shots, which showed that the cook and packer were getting anxious as to my whereabouts.

THE DEER AND THE ELK OF THE PACIFIC COAST

T. S. Van Dyke

CHAPTER I

THE ELK OF THE PACIFIC COAST

THE elk was once found on the great prairies of the Mississippi watershed. But so was the deer. For there were belts of timber lakes surrounded with a heavy growth of reeds, and swales full of slough grass with plenty of rough cover about the bluffs and river-bottoms that intersected it in all places. But who would expect the elk to be at home where the land was too bare for the deer, and only the antelope roamed the many leagues that seemed fit but for wild cattle and horses. Yet it seems certain that the bands of elk that once roamed the great San Joaquin Valley in California surpassed all that has been told in song or story about the elk of the Rocky Mountain parks or plateaus. Leagues away from anything approaching cover, they lived upon plains as open as any on which the buffalo ever flourished. For before the discovery of gold there was no demand for them except at long intervals, when a travelling native found it a little easier to lasso one for camp than one of the cattle that on

the great expanse were about as swift of foot and even more wild.

But the miners soon created a demand for meat, and travelling bands of explorers also murdered everything in sight much as the white man always does. Even the great novelist Dumas turned market hunter as soon as he landed here in 1849, and one of his first performances was to kill an elk in the Sacramento Valley, on whose wide plains bands were roaming the same as cattle.

It was but a short time before the newcomers began to make great corrals with wings of miles in length, into which they drove wild cattle and horses, for there were thousands that had never felt the branding iron and no one claimed. Along with them went antelope and elk in great numbers, and their fate was the same. Some of the meat was sold fresh and some dried, but waste and destruction was the rule; and the big bands of elk began to seek the cover of the great tule marshes along the streams and lagoons. The tule is a spongy, round reed, some fifteen feet long, growing from shallow water, and so dense that half a dozen stalks to the square foot, an inch to an inch and a half in diameter, are common. Back of this, on the dryer ground, are cattails and flag, very rank and tall, so that the whole is about equal to the heaviest canebrake, though not quite as stiff in the individual stalk. Most of the lakes and sloughs

of the San Joaquin Valley are very broad and shallow, with a vast margin between high and low water that has a dense growth of this cover, which also runs over many of the islands of the rivers far up the Sacramento and the other streams leading into San Francisco Bay.

Instead of going to the mountains, which spread their robes of chaparral and timber down to the edge of the plains and higher up offering fastnesses as good as any of the Rocky Mountains, the elk retreated from the open plains with the advent of the American, and hid in the vast tule swamps that covered hundreds of thousands of acres. Here they made great trails that ramified until lost in myriad mazes, while hogs that had gone wild made it extremely interesting for the hunter who dared enter on foot, especially if he had a dog to retreat between his legs at the first charge of a big boar. As it was impossible to see any distance even on horseback, and the mud was too thick for horses, the elk were quite safe for a time. But as the swamps began to be drained and the cover burned off, and roads made through the drying ground, it was again the same old story of the white man. By 1875 the antelope were a curiosity on the great plains, where so many thousands lately glimmered through the dancing heat, while the elk were almost as rare in the great tule swamps that so lately seemed inaccessible. By

1885 only one band was left, and that was on the immense ranch of Miller and Lux in the upper part of the valley, some twenty miles from Bakersfield. In 1895, when I last saw this herd, it was under rigid protection of the herdsmen of the ranch, and though even wilder than in the years gone by, and roaming a part of the Coast Range where the grizzly yet laughed at his pursuers, no one ventured to trouble them. They then numbered about twenty-eight. It is said there are now over one hundred, and they have been turned over to the care of the Lodge of Elks in Bakersfield. But the turning over is merely nominal, for they are as wild as ever. It means only that any man who dares shoot one will repent it. These are the last wild elk known south of Mendocino or Humboldt County in the far north of the state — the lonely survivors of countless thousands.

South of this point some fifty miles the great valley is brought to a close by the Sierra Nevada swinging around to join the Coast Range. But in doing so it falls several thousand feet into the low pass of Tehachipi, through which the Southern Pacific Railroad goes. This is broad, open and low and has for a century been a thoroughfare for cattle, antelope, and everything else that travels. South of it in Antelope Valley is as good feed as in the San Joaquin, while farther south is still

better pasturage with abundance of country in the mountains that is the natural home of the deer. Yet I can find no evidence of the elk ever having passed south of this mysterious line, though so open and so easy. The oldest Indian and Mexican settlers know nothing of him even by tradition, except as the great *alce* of the northern plains.

Nor does he seem to have gone into the high ranges of the Sierra Nevada even in summer, though nothing is wanting there that an elk should desire to complete his happiness. Heavy forests, broad meadows, rocky glens, secluded thickets, and all that one could wish he ignored to stay on the great, dry, blazing plains; and left them only for the still less attractive tule swamps. No trace is found of his existence over the range on the east, and strangely enough he does not seem to have spent much time in the Coast Range. Much less did he cross it, and scarcely ever was seen on the rich slopes that roll away to the silvery sea in such long swells of the finest feed in the world. He appears no more until we reach the great redwoods of the northern coast of California, where he made his last camp. Here the vast forest with its tremendous undergrowth maintained him for a time, but the insatiate greed of the white man for "heads" and for elk teeth for watch-charms was fast consigning this grand

deer to the things that were, when the hand of the law stepped in. Public sentiment sustains the law, and few are those who now dare molest the elk that remain. But for their remoteness they would long since have been sought out, but it was too far from market in early days, and was always uncomfortably wild for the tenderfoot and his murderous guide.

In Oregon the elk fared better, and better yet in Washington and British Columbia, though murdered by thousands. But the vast forests were too big for the leg, if not for the heart, of man. Thousands of square miles yet remain where the foot of man is hardly known, thousands more where it is very difficult for him to go with a horse and almost useless to go without one. This leaves plenty of room for one who can find pleasure in hunting such a grand animal and be satisfied with one or two. Hence there are still large areas on the upper coast where the elk is yet very abundant and always will be. And here, and not in California, is where he should be sought by one who wants to see him at his best in the most splendid home nature has given his race.

Modes of hunting elk on the Pacific coast have always been of the simplest kind. There were no greater hunters in the world than the old Spanish Californians, who lassoed the largest

grizzlies by the light of the moon and dragged them bound on rawhide to fight the wild bull of the hills at their numerous *fiestas*. To them the gun was ridiculous for such work, and generally the last thing they used on game. They had their pick of horses which, for their weight and for swift work on rough ground, have had no superiors in the world. To run down an elk and rope it was for them a trick so simple that they never did it unless for a change of meat. They had thousands of cattle raised only for their hides and tallow; and why kill an elk when no more skill was required than to rope a cow? They rarely failed to uncoil the rope for a deer if they could catch one far enough from the hills, and they loved to match their fleetest horses against the antelope; while they rarely failed to make a dash at a coyote or a wolf when the plain gave a good chance for a race. The great herds of elk, however, they rode by, not in disdain, but with none of the American's love of murder.

But the miners came, and they brought a string of camp followers, with gamblers and loafers of every kind who loved play better than mining. These speedily went to work like swine in a garden of roses. Delighted to find that he could ride into a band of elk without tumbling off the horse, the new American cowboy rioted in herds where he could put a pistol against the flank of

the biggest bull, most of them being so clumsy that any fool that could coil a noose could lasso one. For a time this murder was the only hunting done for elk. But as they began to retreat to the cover of the tules, and the price of meat rose with the demand from the mines, the natives began to watch for elk outside the tules at daylight, while hunters by the score with rifles followed them in all directions. In the northern part of the state the elk left the valleys as early as 1855, to retire to the majestic silence of the great redwoods of the Coast Range, where he could be found only by true still-hunting. And even there the great bands were no longer seen, but only scattered bunches of a dozen or so, with plenty of single ones. The day passed very quickly when one could go wait beside some grassy glade to see a score come in from the woods to feed, and stand so confused when the leader fell that the butcher might pile the rest almost one upon another. This day is about gone even in the farther north, where few hunters have ever penetrated, for, like the deer, the elk has learned from civilization.

In judgment of a certain kind the elk is far superior to the deer. The deer merely laughs at civilization so long as it gives him, leaves him, a certain amount of cover with half a chance to feed and rest. He cares nothing for

noise if not too close. I have known the wildest Virginia deer lie all day within plain sound of the axe, and where the choice vocabulary of the teamsters in the pinery could be plainly heard in the clear cold air. Yet by no amount of ingenuity could one get within rifle shot unless the combination of softness in the snow, openings in the brush for quiet walking, rolling ground behind which to keep out of sight, with the wind and other conditions all right, conspired to help out the most extreme care of which man is capable. So I have known the mule-deer time and again spend the day on the hillside, where he can plainly hear the hunter calling up his dogs, and discussing with his companions the chances of getting venison. And generally the chances are rarely worse than on just such ground. The deer seems to love to take chances on such matters, and knows so well the distance of sounds that he is rarely deceived in that way. For the report of a rifle a little too far to be dangerous he cares no more than for distant thunder, trusting to his judgment to avoid any possible interview with the owner of it.

But the elk will have none of this intellectual treat. Though he may act the fool worse than any of the deer tribe when hit with a bullet or when shot at close by, the sound of shooting

is apt to start him moving out of the country at a pace few care to follow. He knows something is wrong, and cares not to trust himself to decide so important a matter. If such noise should be near enough to alarm a deer, he would only go half a mile or so, stop and look around awhile, go another quarter, perhaps, and look a little more, then fall to feeding a bit, listen awhile, and finally lie down again, within sound, probably, of that same rifle. But the elk will travel over hill and dale, crossing vast gulches and scaling stupendous heights for league upon league until away beyond all danger. And even then he may keep travelling for a day or two more. No matter how much you may scare the deer, he will be back to the same ground before long, for he has been twisting and turning and doubling on his course during most of the run, however long it may be. But you may not see the elk again that season if you have once run him out with noise. And it is almost equally futile to try to overtake him in a stern chase when on such a journey. He can walk too fast and too far, while as a trotter he is a master even among great windfalls. With his long legs he can cross a log so large that few horses care to leap it even where raised in the woods. The great horns, which look all the time as if they would entangle him in the first bush, he carries

with lordly grace through fallen tree tops, tangles of vine-maple, ivy, grapevine, and all the network of the woods, the same as a deer, which means the same as a rabbit or bird. Although his weight makes the track of his big hoof very easy to follow on almost any kind of ground, the contract for overhauling him is a good one to sublet. For even if you succeed, it will be leagues away from your starting-point and probably in country so rough that you cannot even take out the coveted horns. For this chase must be on foot for much chance of success. With a horse you are apt to make too much noise and cannot afford the time to stop for him to feed. You will probably have to lie out one night at least, and have to make camp where night overtakes you without hunting feed for the horse. I have known two Indians follow a dozen elk on snow over a hundred miles, and would not have overtaken them then had the elk not been intercepted by a hunter with a dog, which so confused them they huddled up while the man shot the whole band. This was many years ago in Northern Wisconsin, but the elk is the same traveller all over the Pacific coast.

When the elk once starts on a trip even when not suspecting danger the work is bad enough, and about the only chance there is for the hunter

nowadays is to find him where he is at perfect rest. That is where everything is to his liking, but especially silence and remoteness from any trace of man, or any of his works. The elk is the most omnivorous of the vegetarians. He loved all the wild, dry feed of California as much as the cattle and horses, and became equally fat on it. In the woods he likes all the grasses, bushes, and herbs, so that one need never inquire on what he is feeding. You want mainly to know whether there are any other hunters ahead of you on his range, and if so you may almost as well stay home. The next question is that of feed for your horse, for the elk will thrive where a horse will starve. And though he may not starve, he may fall off so in a few days from the scarcity of grass in the deep shades that you may have to come out on foot.

You should also go prepared to camp on the trail even without the horse. For if you leave fresh tracks too late in the evening to work them out, and attempt to go to a distant camp and come back and pick them up again in the morning, you may be left too far in the rear. This trick, that can so often be used to advantage with deer, will not do for so wide a ranger as the elk. For this trip neither can you load yourself down with a blanket, but must depend

on fire to keep you warm; and you had better carry provisions enough for at least two days. For a good chance to trail up a band of elk, or even a single one, is now so rare that if you have gone to the trouble of going so far and spending the time and money necessary, you cannot afford to let the question of comfort interfere with your further proceedings. And though the nights may be cold, you cannot dress very warm, as you will have to move rapidly by day.

Unless you have a very rare dog, he will be of little or no use to you in this chase. You must go too fast for him to "slowtrack," and you cannot trust him to bring such game to bay. While elk will often turn and fight a dog much more quickly than deer, especially cows with calves, they are more likely on rough ground to depend on leaving him in the rear. Or if the dog overtakes the elk, it will be so far ahead of you and in such broken ground that before you can come up with the procession the dog will have been whipped, or retired to some bush for rest, or gone off to hunt much-needed water.

Subject to these inconveniences, which, for a tough person, amount to almost nothing, such a chase will take you now among the grandest scenery the forest primeval has left to offer. On this coast are still millions of acres where the axe has left no scar, some of it too rough even for our

great government to survey, but where Nature has done all she could to pile sublimity on high and yet leave soil enough for the shaggy robe of timber that makes the mountains still the home of the elk. In other places she has substituted shade and silence hedged about with such a vast tangle of green, brown, and grey from great trunks and broken limbs that you feel still more as if you were living in a different sphere.

Here you may find great hills standing almost on end, ridge joining ridge in endless chain, where you may descend a thousand feet from the top only to find it break off in a precipice of dozens or hundreds of feet into a canyon still farther below. Nowhere can you find a place where you can take your horse down, and if you find one where you can make a toboggan of your trousers, it is by no means certain that you can return. I was once on such a ridge for four days with a party of four and nine horses. It was but six miles long and not over two thousand feet above the gulches that yawned all around it into the different forks of the Coquille River in Oregon, yet we had to spend all our time in trying to descend to the river. A big drove of elk was just ahead of us, their tracks were everywhere, and many more were on the same ground. Everything showed that we were in their chosen home. There was hardly a sapling of any size from

which a long strip of bark had not been rubbed by the elk cleaning the velvet from their horns, either in that year or the one before. Horns in all the stages of decay were around us, with elk trails innumerable. But there was no trail of man to tell us where we could go, no feed but wild peas and a few small patches of grass that the horses would eat up over night, so that we would have to move on in the morning. Shade almost solid ruled over all. The Douglas fir towered one hundred and fifty feet on the hills, with trunks like shipmasts mingling their feathery tops so as to shut out the sun, while down in the gulches the great Port Orford cedar deluged the depths with heavier gloom. Through the few openings from which we could look out upon the world, there was nothing in sight but ridge after ridge, cutting the sky line with serried ranks of pine, and great gulches between, hazily blue with solid timber. The whole was interlaced with such a tangle of fallen trees that one would suppose an elk safe anywhere.

But the wary animal knew better. Though no white man penetrated those shades except at intervals of years, the elk took no chances on the movements of the butcher. Hence, when done feeding he wandered off to the heads of the great slides and washes that broke in ragged seams from the tumbling hills. There, where the pine

sprung in lusty life from the chinks in great layers of conglomerate that looked as if they could support nothing, and giant ferns choked the spaces between the fallen trunks that could not lie save for their erect brethren which held them in place, the elk lay down to ruminate. One would suppose this a fine place to slip upon him and take him at a disadvantage. And so it was, but not exactly like slipping upon an old cow under a tree in the pasture.

In the first place, the eye becomes so used to the big timber that after a while it begins to look much smaller than it really is. But in the meantime you have not had your eye fixed on elks' heads so as to see how they dwindle on such a landscape. On the contrary, they increase in size in proportion to the time you spend without seeing one. So that when you do see it you may not notice the tips of a pair of mere sticks that, like a thousand odd bits of dead branches, rise just a little over the level of the fallen logs. If you do, and recognize the points by their sheen, you may have an easy task, for the elk with all his care to keep man at a distance is a great fool when he fails. When man is near, the elk is an idiot compared with the deer and the antelope. About all you have to do is to avoid his nose. You need trouble yourself little about those senses that make the deer so difficult to circumvent, —

sight and hearing. Yet if he does see you and takes a notion to go, it may be but one plunge into the dark depths and your hunt is over with that one.

Not so very much better is your chance when you see a dark brown or yellowish gray line fade in the darkness as you are travelling along. The heavier the windfalls the faster the elk seems to go, and the more the necessity of his rising into sight to pass over the fallen timber as the deer does, the more he fails to swing high enough to give you a shot from the saddle. Vainly you spring from the horse to scramble on a log so as to get high enough. By the time you are there the brown or gray line is low, or perhaps nothing is in sight but a white patch that makes a beautiful target if it would only stay in view long enough for you to raise the rifle.

Yet this is the very sublimity of forest, draped in silence so broad and impressive that you can hear the distant footfall of your game, and still farther off hear the crack of brush as it leaves you forever. Not the bark of a squirrel or the chirp of a bird may break the silence for hours. All the conditions of the hunt are here, nature at her grandest and wildest, with about all that you call success depending on your own skill and endurance.

Such is much of the country you will now find

in the lower part of the Coast Range of Oregon, but you will not find it so much more easy in those portions of the Cascades where the elk yet lingers. The greater part of this range is more easy to penetrate with a horse on account of the greater abundance of grass. Over much of it one can also go with a wagon. There you may find the deer in all the abundance you wish; but to find the greater elk you must go to where the streams that drain the mighty western face break in deep gorges from the upper slopes. There again you will find the land rising on end to meet you, the forest shaggy with bristling trees whose tops interlace into eternal shade, torn and ragged hillsides where the fallen logs almost slide at your touch, jagged rocks that topple over depths so blue that you dare not step on them to look for your game. Many a band of elk yet lingers around the head waters of these streams, and with the increasing vegetation, caused by stopping the fires in the forest reserve, they will all increase as the years go on and interest in game protection proceeds at its present pace. But even if you should fail to see one, you will be well rewarded, for only on this northern coast can Nature duplicate such charms as she here spreads along the path of him who loves her for her own sake instead of a pair of horns to fasten on a wall.

Perhaps, though, you are not adapted to climbing such rough hillsides and scrambling over such great windfalls on slopes so steep that you know not where you may land on the other side. Well, in the deep silence where the redwoods have not yet felt the hand of man, you may find smoother slopes and forest aisles that reach farther without a bend, with vaster columns of fluted brown supporting the great canopy of green that shuts out nearly all the sun. The dim, religious light that sleeps in this great temple is well suited to set off to the utmost the rich colors of the elk, but you must have keen eyes to see. If you have never been here before, you will naturally be looking for something the size of a horse on the open plain, with the additional advantage of horns so large that they will sparkle afar through the gloom. Little do you imagine that you cannot see more than the tips of them, and these tips so lost in the great jumble of dead branches, which twist in a thousand directions, that your eye might rest on them without recognition. Even in the more open places ferns rise upon ferns to hide the legs of the tallest elk, while salal and a score of other shrubs which flourish in the shade are so rank that a patch of hair is the most you can see. And if your game starts to run, you will see little more than a succession of such patches moving in a panorama of sur-

prising shortness. Yet the feeling of awe which overcomes you, with the consciousness that the great game is all about you, staring at you, perhaps, over the very next log, and that nothing in nature is at fault but your eyes, makes the hunt a continuous pleasure, though it is very likely to end about where it began.

And thus it will be as you go farther into the north, where the increasing rainfall makes the woods more sombre. More elk, for a while, at least; but also more ferns, higher salal, ranker vine-maple, more expansive salmon berries, and trees standing even more like brothers, with dimmer light falling from the sky through the damper air and more sombre shades in these shorter corridors of the forest. With the increasing rain come increasing wet spots that may bog your horse, an increase in the dampness on the logs that may let you slide off into some mire covered with a growth of ferns so rank you could not see it. Windfalls with great tangles of moss adding to the confusion of the vines multiply, fallen trees piled high on each other and becoming all the time more difficult to go around as well as to cross over, confront you, until at last the obstacles are such that the best horse is a burden to you. It is not much farther to where you are a burden to yourself, where you could not see an elk if there were a score within a few rods, where you would not

attempt to alone pack out the finest horns in the woods, and where you might never be able to find them again if you left them to go for help. Immense areas of such ground yet remain that for ages will remain the nursery of the elk; but on the great plains and lower slopes of California, as well as in the more open woods of the Coast Range and the beautiful upper slopes of most of the Cascades, he is gone probably forever. For, while easily tamed and restored in a park, there will always be too much shooting on these grounds to suit him, with too many hunters who will evade the law often enough to make it a little too human for the taste of this fastidious deer.

Nothing can be done with the elk by fire hunting, because he moves so little at night, and he cares so little for salt on this coast that a salt lick is of no use. Driving with hounds, as with deer, is quite out of the question, so that the hunting is narrowed down to still-hunting. Deer care little for dogs, but have a mortal fear of the sly step of man, and the elk has even greater fear. It would be strange, therefore, if still-hunting, which so quickly changes the habits of the deer and even the antelope, should not have the same effect on the elk. Deer soon learn to feed entirely by night where it is too dangerous by day, as in a vineyard or alfalfa patch, and even

when on native feed learn to stop sooner and go much farther back into rougher ground to lie down. The elk is naturally a day feeder, though, like the cow and the horse, he can eat at night if he chooses. It has not taken him long to learn that it is far safer to breakfast before daylight and get out of the way, to go without lunch and dine very late, so as to remain during the day stowed away in some wild place where no man is likely to intrude. He used to love the open sand-bar of a stream to lie on during the day in order to escape flies or mosquitoes. He now finds it safer to bear a few flies for the sake of keeping out of sight. So he used to lie in the sun at times, to harden his horns, as the old hunters say. But now he is an ardent admirer of shade, and cares little for sunshine except on cold days or frosty mornings. And even then you had better spend most of your time looking for him in shade, that will hide his coat better than sunshine. But he has not yet learned the advantage of silence, as has the quail of this coast in the last few years, so that his shrill whistle of defiance to some rival bull still pierces the depths of the forest in rutting time, and gives even the tyro the best of opportunities for his undoing.

It seems an incongruity in nature that this grand deer, which appeals so vividly to our imagination, and in everything imposing easily sur-

passes all the antlered tribes of earth, should fall such an easy victim to the tenderfoot just at the time when it would seem the most easy to escape. But the elk often fails just where the deer begins to show his wisdom. With the deer the hunter's real troubles generally begin when he is within a few hundred feet of his game, but with the elk they generally end at such a point. Too often, when one simple twist around a big log would take him out of sight, and when a dozen little rough gulches, such as shelter him so well when lying down, are there ready to engulf his fleeting form, he will stand like a goose and await the hunter's lead. And then, instead of running away like the stricken deer, the elk often stands to see if there is any more coming. More easy to hit and more easy to kill, ignorant of the many ways in which the deer throws his pursuer off his bleeding trail, the elk is quite apt to be too easy a victim for almost any one with a good rifle who can once get within fair shooting distance. But just there is the rub. While the elk has learned little about handling himself in the immediate presence of man, he knows better than all other game how to beat him with distance. And in this he improves each year, although he may not see a man or hear the sound of a rifle in all that time. It seems a wonderful intuition, with which he is gifted even more than the bear.

The elk of California, especially on the southern valley, is a trifle smaller than that of the farther north and a little smaller than the elk of the Rocky Mountains. But the difference is not very great. A good bull stands about fourteen hands high, or about the height of the native horse. Farther north, larger ones are found, and some of the grandest horns ever seen have come out of the deep dark woods, where one might suppose nature would make the horns smaller so as to enable the animal to thread the heavy brakes with greater ease. Like elk elsewhere, they vary very much in the horns, as also in size, weight, and proportions. It is doubtful if any California elk ever weighed over eight hundred pounds unless unusually fat, while the majority run much below that.

The general colors are the same as those of elk elsewhere, with the same general build. In fact, he has suffered less from change of habitat than almost any of our large game animals. His natural history, times, and mode of breeding, and all else, are much the same as elsewhere, except where persecution has compelled him to abandon some of his old habits that might lead him into trouble, such as spending too much time wallowing in mudholes, standing around in open water, lying out in the open in large droves, migrating on old well-worn trails, etc. He seems to know more

about the white man than any other animal, and when you consider the space that must now be traversed to insure an acquaintance with one in his wild state, the elk of the Pacific Coast is probably the hardest game animal to secure by any means of hunting.

CHAPTER II

THE MULE-DEER

The range of the mule-deer on the western slope of our country is far more varied than that of any other deer. Not only does he at times go well into the range of the blacktail, and at all times find himself at home in the heavy timber or dense brush apparently essential to the existence of the blacktail, but he is equally at home on great open tablelands and even plains where one would expect to find only the antelope. The sole condition is enough gullies, piles of rock, patches of timber or brush, hiding-places of almost any kind, or ground rough enough to enable him to dodge pursuit. And even these do not have to be so very plenty or very close together. He has not the slightest fear of desolation or aridity, and on the worst of deserts, where many a man and horse, and even the tough donkey, have lain down to rise no more, the mule-deer may be found happy and fat. All he needs is enough rough ground and cactus. Mes-

quite beans may in places help round out his sleek sides, while mescal and lechuga may relieve the monotony of his diet; but if he can get enough prickly pear, he will make you as fine venison as you ever saw, and in places be so abundant as to make fine hunting for those that can endure the heat and dryness. You need not trouble yourself in the slightest with the question of how a deer can live where there is no water for many a league. All he wants is the juicy lobe of the prickly pear. This he eats, spines and all, though they are sharp as the finest needles and strong enough to go through an ordinary boot-top, if you kick a little too hard. Strangely enough, these needles do not seem to hurt the mouth or tongue, though they can be plainly seen glistening in the contents of the deer's stomach when opened. They are then softened, but such cannot be the case when they are swallowed. When on this food deer not only can go without water, but often go without it when it is perfectly convenient. On the great Mexican desert known as the Bolson de Mapimi, I hunted for several weeks in 1884, stopping at a railroad station twenty-five miles from anywhere, and known to be twenty-five miles from any other water. Several hundred feet from the station the leakage from the water cars of the railroad made a shallow pond some fifty feet long and a dozen wide.

To the leeward of this fresh tracks of deer could be found almost any morning, all near enough to smell the water, but not one of them going to it. I had plenty of other most positive proof that the deer there, as well as the antelope, did not go to water, though the days were hot enough to make a man want water as much as in midsummer. For many a league there was no green feed except some of the varieties of cactus, and every deer and antelope that I opened in this vicinity was filled with it. The same is true in parts of Sonora and in much of Lower California (Mexico). In the latter there are large areas abounding in deer as fat as you could wish, yet where you will have great trouble to find water for camp. And where you do find water such ground is often the finest in the world to hunt on after you understand the peculiarities of the desert. You can learn to love the desert as well as the timber.

In California I never knew deer eat cactus but once. That was in a year of severe drouth, and the only fat deer I saw that year was a buck that was full of our thorniest cactus. Here their favorite food is the leaf of the live-oak or live-oak brush, which is almost invariably found in them. The evergreen leaves of the wild lilac, wild cherry and buckthorn, with the lucerne and wild buckwheat which robe much of the hills, the mountain-mahogany, and some of the sumacs, they also

eat. I have never known them eat hay as the Virginia deer will sometimes do when very hungry, and they rarely touch any of the alfileria, burr-clover, or other of the nutritious fodder plants of which cattle are here so fond. But they will eat alfalfa and nibble growing grain — probably because they think they are doing mischief, this deer being the master of his tribe in that line.

When I first came to California in 1875, I heard much talk of a huge burro (donkey) deer that lived on the desert slope of the main chain of the Sierra Nevada, which continues all the way down through the Mexican territory of Lower California. I afterward saw several and was inclined to believe them different from those on the western slope. Later I became convinced that it was a case of bad observation, and that abnormally large specimens of the mule-deer are found through its entire range. Though my deer-hunting reaches over thirty-five years, I never actually weighed one until last year, 1901, when we happened to stop where there were scales, with a big buck just killed. Without the entrails or shanks it weighed one hundred and sixty pounds. The fat plainly showed it had fallen off a little, and a month earlier was probably ten pounds heavier. He probably weighed as he stood full two hundred pounds and probably weighed two hundred

and ten the first of July, which is the climax of fatness in most animals in California. This was a fair, average big buck such as most people would guess two hundred and twenty-five pounds dressed. I have seen several that would weigh something more, but for one such there are a dozen that will not dress one hundred and twenty. The largest I ever shot was in Durango, Mexico, and it was plainly larger and fatter than this one.

Most any one would have taken it for a different deer, but it was identical with the common deer of southern California.

But on the desert side of the mountains in northern California is found what is called the "mule-tailed deer," a mule-deer so different from the common one that it is probably correct to consider it another variety. This deer will average larger than the mule-deer of the south, though it is doubtful if any will exceed some of the specimens found at times along the whole lower coast. This mule-tailed deer may have occasionally straggled to the southern deserts and given rise to the idea of another deer. Or the confusion of names and the extra large bucks sometimes found among the common mule-deer may account for it. I have never known the "mule-tailed" deer to reach the coast or interior valleys of California, and the only one known west of the Sierra Nevada and south of the

RANGE OF BLACK-TAIL DEER
(ODOCOILEUS COLUMBIANUS
AND SUBSPECIES)
By Dr. C. Hart Merriam
PACIFIC OCEAN
ALASKA
BRITISH COLUMBIA
ATHABASCA
ALBERTA
SASKATCHEWAN
MANITOBA
WASHINGTON
OREGON
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
NEBRASKA
NEVADA
UTAH
COLORADO
KANSAS
OKLAHOMA TER.
ARIZONA
NEW MEXICO
TEXAS
LOWER CALIFORNIA
SONORA
CHIHUAHUA
COAHUILA
BORMAY & CO. N.Y.

central part of the state is the common mule-deer.

On the other hand, it is quite certain that far down in Lower California is a very small specimen of the mule-deer that occasionally reaches into California. Though I have never seen it, I have seen its antlers, and know of three being killed a hundred miles north of the Mexican line. The largest, a four-year-old buck in good condition, weighed only fifty pounds, and the next largest, a barren doe and fat, weighed but forty. This deer hardly ever comes out of the very heaviest brush. It is quite an accident to see one at all, and little is known of its habits. It is so small that it cannot be mistaken for the common deer, and there can be no mistake about a set of full antlers such as I have seen in Lower California. But it is too rare to hunt.

Over all this range the common mule-deer is found, from coast to mountain top, in all sorts of cover and absence of cover, so long as there is enough rough ground for which he can steer if trouble arises. Though a clumsy-looking animal compared with the blacktail or the Virginia deer, the mule-deer is still full of grace and beauty. His awkwardness is only when unsuspicious, at which time deer and antelope generally lack the elegant lines they have when looking for danger. The ears, eight inches long and

seven wide, that a moment ago looked so stupid when they were thrown back and the animal had its head down, suddenly round out to a graceful oval the minute they are thrown forward in quest of danger, and seem not a whit too large, even in the fawn, on which they are almost as large as on the adult. The angularity of a moment ago gives sudden place to flowing lines that are pretty even in a poor deer and charming on a fat one.

Still more surprising is the change when the mule-deer concludes that danger is imminent. Though he knows right well how to canter, and can lay himself to the ground in dead run like a horse if necessary, he seems to enjoy leaping high, as if to tempt your fire, and for this he prefers the bouncing gait. All four hoofs strike the ground with one far-sounding thump which sends it aloft much higher than the common leap of the Virginia deer. The feet are gathered closely up as it rises, held so till on the descent, when they are again thrown downward like steel springs to spurn the ground. This makes a gait that is exceedingly pretty, though on principle much more tiresome than the lower loping pace of other deer. The animal is all the time throwing itself higher than is needed, thus lengthening the time between the points of striking ground without increasing the distance between them. The consequence is that, because it will not let itself

out to a dead run until pretty well tired with the other pace, a good dog can overtake a mule-deer on open ground much more quickly than the Virginia deer.

But it is not necessary to squander sympathy on this account. The deer rarely strays from rough ground more than enough to encourage the dog at the start. The minute he is among brush and rocks the sympathy is all needed by the dog. If there is anything in the shape of brush that this deer cannot smash or twist through without apparent delay to his rapid foot, I have not yet seen it. The chaparral of southern California is wholly unique, that of the northern mountains being mere oak openings compared with most of it. Manzanita, scrub-oak, thorny lilac, adenostama, cercocarpus, and mountain-mahogany, with laurel, chokecherry and baccharis, stiff and unyielding, with fifty times the number of twigs and branches needed for lusty life, all are trying to strangle each other with a myriad arms, beginning the strife often at a point where a man would have to crawl to get through and sometimes rising fifteen feet in the struggle. This makes a vest of evergreen that rolls for miles over hill and dale, with shining boulders projecting here and there, and groves of live-oak massed in the heads of little gulches or engirdling some tiny meadow. So dense is the mass of green and so small the

shades that the surface looks like velvet, here brightly green where the sun strikes it, there darkly blue where it sleeps in shade, but generally a mass of sparkling light from the great number of very small leaves. But the boulders that glisten above it are nothing to those that lie below, and in its natural state it is about the hardest combination that man or dog is ever likely called to encounter.

Such is the chosen home of this deer, although he loves the heavy timber of the mountains and the dense jungles of the river bottoms quite as well as any other deer. The only possible chance a few years ago was to catch the game outside of this, and even then it took a deadly rifle to make sure of covering. For if the deer once got into that heavy brush, a few yards of attempted tracking were generally enough for you, and if the day were hot a few feet would often do. But there was much of this that was low enough, so you could see the head or even the back of a deer, and from an early day much of the heavier stuff was burned off, with openings of different sizes here and there on which one could see almost the whole of the body.

The most interesting deer-hunting on this coast used to be on the more open portions of such ground and around the patches of chaparral, while the heavy stuff that had been swept by fire, when

not so dry as to consume the stubs too much, was the grandest of all places to see this deer perform. Other deer leaping through the wildest windfalls are but an approach to the skill with which this mule-deer defied both rifle and dog. On almost any rough ground and especially up hill, common dogs are soon willing to resign; but it is in burnt chaparral, where black stubs that are all the stiffer for being burnt curl upward from six to eight feet and almost dense enough for a cornfield, with enough granite boulders among the rows to represent giant pumpkins, that this deer exhibits best. Through this he riots with his loftiest jumps and most erratic twists. The sticks he sweeps so gayly aside throw back the largest dog, many deflect the best-aimed bullet, while the ever changing curve from high to low and from side to side leave you wondering where you are to aim. Nothing in all my field experience was ever quite so interesting as being one of a party posted on the ridges around such a brushy basin, each one of us emptying the whole magazine of his repeater at a two-hundred-pound buck in wild career through the middle of it, and half a dozen "deer dogs" led by a great Scotch deerhound of tremendous speed struggling vainly in his rear; yet the quarry, dashing sunlight from his glittering antlers at the farther edge, skipped gayly up a gulch of rocky stairs from which the last bullet sung on high a

despairing tenor to the last yelp of the bruised and breathless pack.

From 1875 to 1885 I lived where deer were so plentiful that going out to find fresh tracks was like going to the corner grocery. In the greater part of the section there were no hunters but myself, and deer so abundant that I made my own game laws, with no one to protest. Compelled to spend most of my time in the hills to regain lost health, I had little to do but study nature; and many a deer have I tracked up without a gun, and many a one have I let go unshot at simply because I did not want it, enjoying the hunt just about the same. In this way I knew many a deer nearly as well as if he were hanging under the tree at the house, for I rarely troubled those near by, but kept them for emergencies, short hunts, and hunts without a gun. Educated on the wary Virginia deer, I at first felt nothing but contempt for a deer that one can get a shot at with boots on and stiff overalls scratching the dry brush. But time soon gave me a high respect for the mule-deer; and it has been constantly growing as the animal keeps pace with modern guns and ammunition.

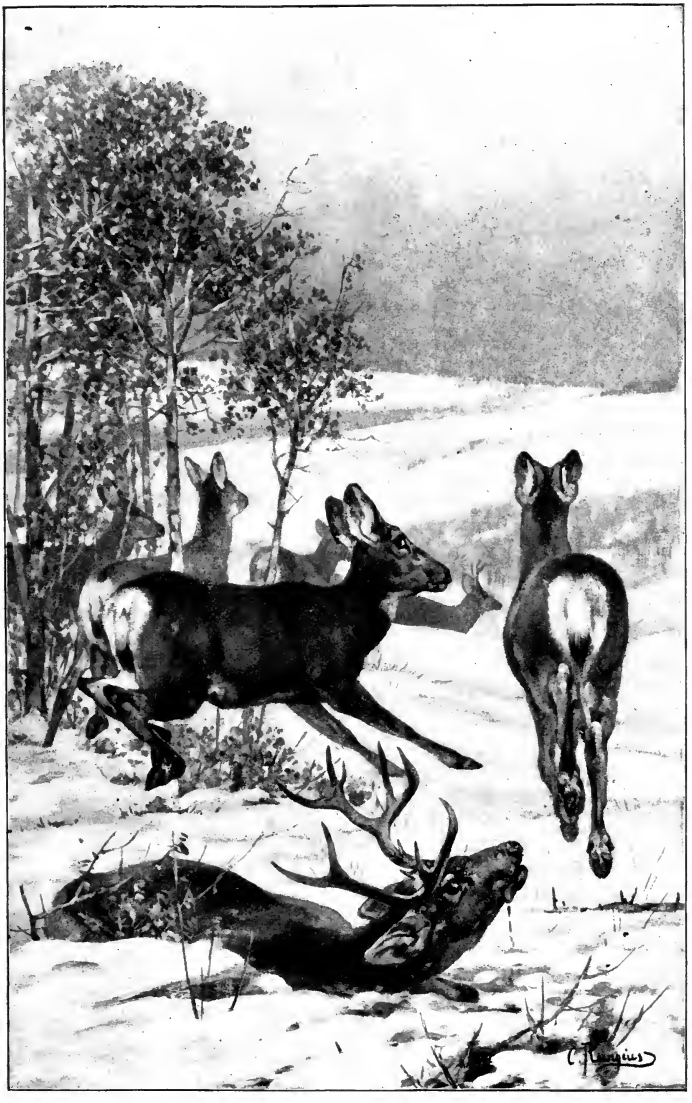
Every one who has hunted deer much sometimes wonders if the animal has not a sixth sense. So often when you have the wind just right, are certain you are making no noise, while still more

certain you are out of sight behind some ridge, and just when you are sure you have the game in your hand, you find the tracks of its speedy disappearance. No matter how softly you have lowered your moccasined foot through the snow, or how carefully you have eased off every twig along your course that could scrape on the softest cloth, or how carefully you have kept the wind in your face, out of sight and even off the trail most of the time to avoid the danger of the deer's watching that track, — you find it suddenly gone; jumped, too, so far away that you could not even hear its bounding feet on the frozen ground or catch the slightest glimpse of its rapid flight. Such disappointments make one love deer-hunting more than any other kind, and the mule-deer of this coast has a goodly store of them in hand for any one who will follow him long enough. One who has been out only a few times may stumble over a blockhead, of which the proportion is much greater than among Virginia deer. But one who hunts on the same ground long enough to know almost every individual deer, and notes to-day the tracks of yesterday and the day before, as well as those of the last hour, will be much surprised to learn how many deer have slipped away from him without his suspecting it.

In addition to this mysterious sense, their ears

are as keen as those of any deer, and their knowledge of the scent of a man I have found fully developed in fawns on ground that I knew positively had not known the step of man since their birth. Though their eyes are dull for an object at rest, they have that same wonderful quickness to detect motion which makes the hunting of other deer so difficult. I have seen one watch the motion of my companion on a ridge so far off that the sharpest eyes of man could hardly say with certainty what it was. And I have seen scores of them jump and run from their beds at the sight of my head rising slowly over a ridge two hundred yards away, while the flash of a rifle on the shoulder will send many a one flying at twice that distance.

This deer is apt at first to excite only your contempt by his stupidity in lying still until you are very near him and then showing himself. But you will soon find this the exception, and for every one you get in that way, several dozen escape you by close hiding. For in that respect this deer is a master. From a distance I once saw one enter a bit of isolated brush of not over an acre and a quarter in extent. I did not want it, but did want to see it run. First I stood on a slope some feet above and threw rocks in, but nothing moved. Then I went into the brush with the same result, going all through it, making



THE MULE-DEER IN FLIGHT

much noise, and kicking here and there. Then I circled it, but there was no track going out, while the one going in was plain enough; and I had been all the time in such plain sight that the game could not have gone out without my seeing. Then I tried tracking the deer around in the brush. The tracks multiplied all the time, showing plainly that the beast was sneaking around in the cover. After spending about an hour in the cover and an hour on the hillside above, waiting for the deer to move, I gave up. If this is not shrewdness, what is? The amount or quality of the noise you make does not change the case in the slightest. You may sometimes start one by getting to the windward, but generally not, for when the deer is playing this game it knows perfectly well that you are a man, and a man that will finally get tired. Often, instead of sneaking, they will lie still until you almost tread on them and then dash into a little gulch or around some rock or through a bunch of dense brush that gives you not a second of time to shoot, and then they are gone forever. Several times I have been close enough to breathe the dust raised from the dry ground by their plunging feet. A friend riding along a hillside trail in dense brush one day, just ahead of me, saw one lying under a manzanita with head down and eyes up watching him. As his rifle was lying

across the saddle in his lap he just tipped it over and fired. His horse sprung from under him so quickly that my horse almost trod on him as he rolled over the ground, but he bagged the game, and its coat was blackened with the powder. They also drop their heads and so crouch in low brush, that a very large buck can almost sneak out of sight in a good potato patch. When you have been taken in a few times in this way, your respect for the animal increases rapidly.

And it increases still more when this deer starts in full career, for there is no more magnificent target for the rifle than when he concludes that hiding may be a failure and that flight is safer. Where the chaparral is high he may run through without bounding above it. But where it is about six feet, or even seven, he seems to take special pleasure in drawing your fire by swinging full above it where entirely unnecessary. This makes the deer's course a line of glistening curves on which it is very difficult to make calculation, especially when he works into the combination a new twist to one side or the other at almost every spring, beside varying the height of every leap. As a rule your sole reliance in such case is speed of fire. On open ground you can make calculations on the up-and-down motion as well as on the forward — that is, sometimes — and fire every shot as you should, as if it were your last.

But in heavy brush every leap is liable to be the last, for at any moment the game drops out of sight and sneaks away, or goes off on a low trot with head down, or even breaks into a low run, in all of which he is as perfect as in his lofty bounding. Keeping a string of empty shells hot from the ejector of the repeater revolving in whizzing curves above your head is ruinous to good shooting, but in many cases it is the only chance. And when the firing pin clicks dead on the empty barrel and the brush closes forever on the last curve of shining fur, I never feel badly, for if there is anything I love it is game that knows how to escape. Such work should be prepared for by much fine target practice off-hand, as this snap shooting tends to destroy that extreme fineness of sight and touch on the trigger, on which in the long run success with the rifle most depends.

This deer is probably the most mischievous of his race. Most all deer eat turnips, beans, and a few other things, and occasionally nip grain. But the mule-deer will spoil from thirty to fifty of the largest bunches of grapes in a night, and later in the season will finish off the leaves and shoots, besides cleaning up the new wood on deciduous fruit trees. Apples, Japanese persimmons, pears, quinces, almost anything in reach, he spoils with a single bite and passes on to another, as he does

with a bunch of grapes. Bean vines, melons, squashes, and many other things he harvests often more completely than the settler would if he had a chance.

Few things in California have been more amusing than the efforts of many a settler near the base of the hills to reimburse his loss by killing one of these mischievous deer for the table. After deciding to have some venison of his own fattening, and buying a new rifle with plenty of shine on it, he discovers that the deer which people tell him are on foot morning and evening in the hills, don't exist around his place. This is true mainly when they are living on the native feed of the hills. When they are raiding fine raisin grapes, they wait until night has drawn her heaviest curtains over the eyes of the tenderfoot. By the time it is light enough to read on the bare ground the record of their banquet, they are far up the hillside again. Being well dined, they have no use for any of the native feed they got along with while the grapes were growing. They have nothing farther to do but lie down in the heaviest brush, and smile at the sound of heavy boots scraping and stumbling up the hill. If the breath of the owner of the boots holds out for the thousand feet or more of ascent generally necessary, they smile still more as he puffs and pants around in the chaparral, which he reaches

about the time the sun blazes high through the clear, dry air of autumn and before a particle of the daily sea breeze has risen. And little more does he see if he goes there in the evening to await the deer's rising and coming out on the open ground. Raisin grapes are very substantial, being both food and drink, and after a night's banquet on them, early rising for the deer the next evening would be quite absurd.

After returning from the hills a few times, hot, hungry, and disgusted, without seeing a hair or hearing the sound of a hoof, he concludes to watch for them in the vineyard. The seven-foot fence he has built around it they leap like birds, or if there is an opening in it large enough to let a decent dog through, the largest buck will go through it or under it, antlers and all, especially if it is of barbed wire. This is their especial delight, and a deer will go several yards to find a good place it can use as a backscratcher rather than lose its advantage by jumping it. As nearly every kind of trap, noose, or pitfall fails to stop the marauder, the owner thinks he has a certainty in the enclosure.

But even on open ground game is very hard to see at night and still harder to shoot, especially by one not used to it, and deer see almost as well as by day and can smell and hear even better. While some will not enter the vineyard at all,

others care nothing for the presence of man, and come so near that he can hear them eating. Still, he cannot see them, for the grapevines are much higher and the deer much lower than they seem when seen apart. Even by moonlight, when often most sure of success, the hunter is often deceived the worst. Although I have seen many a man try this watching, I never knew but one to succeed. He did it by digging a pit in the ground where it commanded a view of a knoll against the sky. During the season he managed in this way to get six deer, and in the operation his vineyard of ten acres was mostly destroyed. Many would imagine that the concentration of deer at such a place would make the surrounding hills fine for hunting; but unless you are on the hilltop, a mile or more away, by daylight your chances will be slight, and you will discover that there are several other directions they can take as well as the one you have chosen for them. Another way is to track them out, find where they went, and go at evening to wait for them to rise; but this is slow also, as the settler found, for when thus feeding the deer seems perfectly aware that he is doing mischief, and appears to know that somebody seeks recompense.

An apparent confirmation of this is the entirely different action of the same deer when they quit feeding on the cultivated place and resort to

nature's orchard. When acorns are falling, deer go to the groves of live-oaks in the little valleys and canyons along the base of the hills, where the feed is concentrated, instead of spending time with the scattered trees along the hills. But the very same deer that would not go near the vineyard until after night, and went out before daylight to lie down at once in the heaviest cover, now stray from the hills into these groves as early as four o'clock in the afternoon and sometimes an hour earlier. And in the morning they lounge about as late even as ten o'clock, and nearly always as late as nine, nibbling acorns and standing around in the sunny spots before moving off to the hills. Those deer that went into the hills earlier went slowly, did not go very far, and lingered long on foot before lying down for the day.

The hunting in some of these groves used to be the easiest on earth. Many were like old English parks, filled with oaks that were old settlers before the falling of the acorn that made the keel of the *Mayflower*. In many places they covered the ground with almost solid shade, with the ground nearly always rolling enough to enable one to keep out of sight, generally with a gully or ravine winding through it just deep enough to permit one to travel with ease on some old cattle trail, and just low enough to hide, yet allow you

to see over each bank. As the breeze from sea by day or land at night can nearly always be predicted to a certainty, and follows the run of the water, there was nothing to do but lounge through one of these parks, to most of which you could easily drive, even in the earliest days. For years I did most all my reading and writing under a natural arbor of wild grape in one of these, about a quarter of a mile from the house, with others equally wild within a short ride. Nothing was plainer than that the deer well knew the difference between them and the vineyard or garden. They showed no more watchfulness than when in the hills, and often seemed actually more careless, as in some places they would spend the day there lying under the trees just like cattle.

Persecution and the rapid settlement of the country have not only reduced the numbers of the mule-deer very greatly, but decidedly changed his habits. He no longer spends the day in the sumac of the lower hills, or lies beneath the sweeping sycamore in the edge of the valley. No more will you find the big buck under the heteromeles on the hillside that looks out upon the distant sea, or under the grapevine in the river bottom, or even in the dense chaparral, unless it is well up the mountain's breast and in its roughest brakes. Less often do they come to the vineyard or orchard even in the darkest night, or if they do it is to go

still higher up and farther back into the hills than ever before. The day when one could wander about at random among our hills is past. For any approach to certainty one must now locate the general whereabouts of the game by its tracks — no easy matter when we are limited to bucks, a law we now respect because of its rigorous necessity. By the time this is done it is apt to be too late to find his especial whereabouts of that day. The only way is to be there at or near daylight the next morning, on the highest ridges that will give you a view of the situation. Or you may stay and wait until evening brings them again to their feet. But there is some danger they will have discovered you, and you will be quite certain not to see one. Being there in the morning early enough often means camping very near, and sometimes on the high ridges without water, so that the pursuit of the mule-deer is no longer the joy of the tenderfoot who wants to kill a deer. An old fool deer yet remains here and there that the tenderfoot may stumble over, but the "picnic" part of the hunting is gone forever. But he who loves hunting for its own sake and not for count or heads enjoys the chase as much as ever. The mule-deer will outlast all his enemies, for there is too much wild country that can never be cleared. Yet much of the future hunting will be in preserves, and most of it mere murder; for the mule-

deer when not troubled becomes disgustingly tame, just as he becomes dangerously familiar as a pet. He is the worst of his race in this respect, and the baby fawn that seems so innocent will butt you over or strike you with its feet before it is half grown.

I have not yet been able to discover that persecution makes this deer watch its back track before being started. Even after being started it is not so particular as the Virginia in this respect, and it is much more easy to see again and even to get a good shot at, though as a rule it does not pay to try. He will often stop on the upward slope of the next hill after running over a ridge, and often, if he is running then, a ball that ploughs the dry dirt ahead of him will turn or daze him long enough to give you a shot or two. So that if you are near the crest of a ridge when one runs over, it will generally pay to run to the top of it.

In rainy weather the movements of this deer are irregular after he once begins to travel. During a storm he generally moves little, keeping in heavy brush about the heads of deep gulches or sheltering rocks. But after the rain is over he will go almost anywhere and travel farther than before, so that tracking by your knowledge of his habits is much more difficult than when the ground is dry. In the dry summer of southern California his habits are very regular when not

too much disturbed. If you find a fresh track in the morning leading up hill from a spring you may be quite certain he is not going down hill again that morning, at least not very far, and may be quite confident of finding his track along the upper slope. If not, then it is pretty good evidence that he has lain down somewhere on the face of the hill. The same when he has left feeding-ground at the base of the hill. If the hill is not too small, he is not likely to go down the other side for the sake of going up another hill. So, if not bothered too much, most of his days will be passed in an orbit of little over three miles in diameter, and often much less. This is generally around some common centre, like a good spring or feeding-ground, or extra good hiding-place into which to run. On this area the deer will often not move over a mile in a day, swinging from one side to the other, spending two or three days here and two or three there. You need not look for them to-day where you started them yesterday, but in a few days they will be there again or somewhere very near. For on the greater part of the range there is no migration of this deer to speak of. It will move off the higher mountains down the sides when the snow is deep, but that is not far. And once in a while deer move into some locality from a distance, and also become scarce for a time. But

such things are at long intervals and irregular. So acorns and a vineyard or orchard may concentrate them, but they have not come far, and as a rule their movements are influenced little by the question of food or weather.

In the high mountains the period of seclusion seems to last longer than along the coast. As late as the middle of July, at four thousand feet, I have hunted for ten days where I could find plenty of fresh tracks at daylight around the edges of small patches of brush of only a few acres each, where I could easily circle and find positive proof that they had not gone out, yet I could be there at the first glimmer of dawn, and again at the last hour or so of daylight, on a commanding position, with a good glass, yet see never a sign of fur or horns. This is often bad enough along the lower levels, but does not last as long as in the mountains. The length of the breeding season probably has something to do with it, for spotted fawns may be seen in the mountains as late as July, while at the coast the spots are off early in June.

Driving with hounds to runways is even less of a success with the mule-deer here than with the blacktail in the North. While he likes an easy road when undisturbed as well as any, he cares not where he goes when alarmed: plunges into the thickest masses of rock or brush, or both; up

hill or down is all the same to him, here clattering down the rocky bottom of a steep wash, there skipping gayly from side to side of a steep gully up which the dog can hardly scramble, thrown back by the brush in the bottom and on the sides. You may run the same deer off the same hill a dozen times, and he will take a different course every time. It is, therefore, too difficult to establish runways even by trial. The dryness of the air and the heat which impair the scent of a dog after a short run are also greater than in the North, while water to refresh the dogs is much more scarce. A two-mile run, which sets the average dog thinking, is nothing for the deer even with the lofty leaps that are so tiresome. At three miles the yelp of the dog becomes a wail of despair, and the longest run I ever knew was but four miles when the dog gave up. This buck slipped away in fine style, though very fat, but a few weeks afterward I found him miserably emaciated, probably from the run in the heat. Had the dog been as fat as the deer, he would not have lasted half a mile.

Still there are places where dogs may be used to advantage, such as a hill that is a mere spur of a larger hill from which it is separated by "a saddle." It may have a top like a table covered with several acres of brush with open flanks. If this stood off alone it would be too small to have

any game on it. But being part of a larger range, it may have several deer on its top, if they are not hunted too much. A dog need not stand high in the "Kennel Register" to hustle the deer about so that they will run around on the open flanks or start to cross the saddle for the larger hill. The same is true where brush is in scattered patches with good openings between, or the game is in brushy ravines with good ridges to stand on, and similar combinations. And you need have no compunctions against using hounds under such circumstances, for the game will likely give you and the dogs the most interesting experience you ever had.

This deer is plainly a tougher animal than the Virginia deer, and will readily carry several bullets away into brush where you will never find him without a good dog. I found an ounce round ball with seven drams of the very strongest powder none too effective for hunting around the patches of heavy brush, in spite of the talk about "spoiling all the meat," "ruining the hide," etc. Letting a wounded one alone so as to get stiff and sick, which is so often a success with the Virginia deer, especially in very cold weather, is generally a failure on this deer. I have known one go seven miles without stopping when shot a little too far back with a Winchester .50-caliber express, and be extremely lively the next day.

The surest way with a wounded one is to chase it up as fast as possible before it finds its pace after recovering from the first shock. For if he once gets into heavy brush, you are quite likely to be the permanent proprietor of the shock, especially on a hot day.

The early summer coat of the mule-deer is yellowish tan color, which in July falls rapidly off, leaving a fine glossy black which soon takes a gray tinge as the hairs increase in length. The coat becomes rapidly gray, and so continues through the winter until late in the spring. Black still persists along the brisket and on the forehead, but most of the coat is a glossy, iron gray that shines afar in the sun, and is so often the only thing by which you can detect the animal at a distance, that shining spots on the landscape and especially in brush must always be examined, no matter what their shape. With the warm weather of late spring the gray falls rapidly away into the yellow, which seldom lasts over three months, while the black period is sometimes not more than three weeks, or even less.

The antlers are, if possible, more irregular than those of the blacktail, and afford no indication of the deer's age that is of value. When in the velvet they seem darker than the velvet of the Virginia deer, and when out of the velvet they at first seem more brown. Most of them are forked

horns with few or no points, so that a fine pair need not be expected. They are of all shapes, sizes, and degrees of branching, so that no one can say just what the average is. They start from the bony crest of the forehead, instead of the skin on the back of the neck, as seen in some celebrated pictures. And, instead of lying along the back, as some artists have them, they point forward, so that a dog that is not pretty quick will be impaled in a twinkling without much lowering of the deer's nose. The antlers are carried late into winter, and often are not shed before the latter part of February. The new growth begins at once, so that by the middle of July the velvet is generally off and the antlers trim and clean. The mooted question of what becomes of deer's horns that are shed is not so difficult to answer here. I have found them in all stages of disintegration from "weathering" — the same as the rocks. Strangely enough this takes place, as with the rocks, even faster where there is little or no rain than where there is plenty. On the desert, horn is like a plough-handle or a wagon-tongue, only more so. Without use and without rain they "weather" away.

In size and proportions this deer varies even more than the Virginia. A good-sized buck will measure six feet from tip of nose to root of tail without special stretching out. That is

about as he would stand with nose a little outstretched in feeding. But as deer are never as high as they seem in pictures, he will be but twenty inches high at the brisket. The length of the shank of hind leg is the same, with a girth at the shoulder of three feet ten inches for a fat one. This makes a very handsome animal, though its height at the top of the shoulder will not be over forty inches. Its great elasticity and quickness when in motion make it look larger and far more imposing than when undergoing measurement after death.

The tail varies greatly with the individual as well as with the age. It is from six to eight inches long, often so short on the largest deer as to appear stubby. On the greater part of the under side a narrow strip is naked, while the rest is a warm white. In diameter it generally narrows from the base to within a third or a fourth of the end, where it suddenly widens out into a tuft of longer hairs, mainly black. A strip of brownish gray, or brown, runs down the top to near the end, but most of the tuft is quite black, while most of the rest is quite white. Being set against a large white patch on the rump, some ten inches wide, this black is so conspicuous that it is not strange it has received among most hunters the name of "blacktail," which properly belongs to the Columbia deer of the North. This

tail is hardly seen in running, as it is generally carried down. And even when carried half up, or even horizontal as it sometimes is, it is hardly noticed like the tail of the Virginia deer, which so strikes the eye at the first jump.

The tail of the "mule-tailed" deer is from one-third to one-half longer, of about equal diameter throughout, with no very distinct tuft, but rather a bunch of black hairs in the end. All the rest is a warm white, sometimes with a tawny tinge, hairs all longer than in the tail of the other except at the end, where they are not long enough to form any distinct tuft. The white runs to the under side, where there is little or no sign of a naked stripe. Some of the color of the back reaches an inch or two down on the upper side of the tail. This deer has also a broader section of white under the throat, but it has the same black forehead, the same general expression, ears, and shape as the other, with the same light cinnamon on the legs, black brisket, white rump. Sportsmen differ about its classification as a separate variety; but there is no deer in southern California having that kind of a tail or so much white on the throat. It is generally supposed a larger deer, and it is quite probable that there are fewer small specimens among it than among the deer of the South. But there are some in the South as large as any deer in America that are

plainly of the stubby-tailed variety; and the uniformity of their tails is so great that the difference between them and the tail of the other can hardly be attributed to age or accident. All of them are misrepresented by the great American artist. They do not have great calf snouts, but fine black noses, and they do not stand with their mouths open and antlers laid back, screaming at each other. They can do some effective fighting at times, though half a dozen bucks may, during rutting time, be on such friendly terms that one who is cool can bag them all without leaving his tracks. They do not snort as much as the Virginia deer, and when they do the snort lacks most of the hollow whistling sound of the latter.

One seeing the feed on most of their range would imagine that the mule-deer of the south of California would rarely make good venison. It is quite the reverse, and an animal entirely devoid of fat is both tender and juicy, provided it is not emaciated from sickness. Yearlings and does, unless barren, rarely have any fat on them, and the best three-year-old buck rarely has enough to brag of. None ever get as fat as the Virginia deer in the East, but they are all good venison just the same. The proportion of bucks, too, that are musky in rutting time is far less than on the Atlantic coast. Most large deer with necks swelled to the greatest capacity are

perfectly free from it. Once in a great while there is a very strong one, and I once had a pork barrel ruined by trying to extract the flavor from a big buck by pickling it. I met another once at night that must have been fifty yards away, and was brought to a sudden halt by the strong flavor of muskrat coming down a little gulch on the evening breeze. He gave a snort and ran, but the stream of scent remained for a minute or so longer. Such cases, however, are extremely rare, and the deer is nearly always worth your labor.

The mule-deer of the southern coast of the Pacific is a special blessing to many because he is at his best in summer, when they can get away from business; whereas at that time still-hunting is almost an impossibility in the rainy lands because of the great density of the cover when the green of summer is at its height. But still-hunting here is then about the same as in the fall, except that the period of seclusion is not as fully over. On the other hand, the venison is at its fattest, while the weather is as charming for camping as one could wish and rarely too warm for morning or evening hunting. One is not driven to lick-watching, fire-hunting, or any of the miserable modes of murder resorted to at that time in the East by those who must have a deer. But one can here enjoy to the full that satisfaction which results from matching one's self with un-

aided wits against an animal knowing so well how to care for itself, that when you seek it you had better leave in camp everything in the nature of a gillie or a guide or even your best hunting companion, or you will only double the chances of its slipping away unsuspected. And you had better wear soft moccasins as well as in the East, and take every other precaution consistent with covering ground enough. When you have learned him well you will say that the mule-deer is the peer of any game, next to the Virginia, and almost equal to him.

NOTE. — Much that applies with equal force to modes of hunting this deer has been stated under the title of the blacktail, and could not well be repeated without trespassing on the patience of the reader who knows how to apply the principles.

CHAPTER III

THE COLUMBIA BLACKTAIL

With the exception of a few Virginia deer in southern Arizona, which belong really to Sonora, the deer of the entire western slope of the continental divide has a shorter tail than the Virginia deer, with black hairs in the end. In most of them the tail is short, with a tuft of hair, mostly black, at the end. As the tail is not carried up, but droops over the white rump so as to make the black show plainly, all the deer of the Pacific coast and the interior basin to the Rocky Mountains are called the "blacktail" by way of distinction from the Virginia deer, which, over all that range, is called the "whitetail."

But there is a plain difference between the deer of the southern half of California and those of the northern half. The latter inhabit the whole coast west of the crest of the Sierra Nevada, while the deer of the southern half run the whole length of Lower California (Mexico). The dividing line between the two is not easy to define, but it is a strip of fifty to seventy miles wide about the centre of the state. The deer of the southern half is called the mule-deer by those who know the difference, and those of the north the black-

tail, or Columbia blacktail when they wish to be more particular. Beyond this belt the mule-deer is very rare on the range of the blacktail, while the blacktail is practically unknown on the range of the mule-deer.

The line between their eastern and western range is much more easy to define in the case of the blacktail. While the mule-deer at all points passes to the east over the crest of the Sierra Nevada, the blacktail does not pass it to any extent; and it is the same on the continuation of the great range into the Cascades of Oregon. I have found them as far east as Klamath Lake, but this is but a few miles over the crest of the range, the general character of the woods and feed being the same. Eastward of that the mule-deer only is found.

The blacktail seems to care little for open country, and is found almost entirely in timber or heavy brush. The evergreen brush, or chaparral, that robes many of the hills of northern California with miles of wavy folds, is one of his favorite abodes. While the greater part of this is too dense for the hunter to penetrate with comfort, and too high for him to see anything until almost upon it, there are many openings which he can thread with ease, many points upon which he can sit and look down upon the dozens of acres where a pair of horns may come surging into sight above the sea of

verdure, or a curve of glistening hair may rise and fall like the dolphin through the wave as the deer discovers the hunter's presence. Though the greater number will be found in the heavy timber which covers most of the range of this deer, throughout the southern part of its range it will be found from coast to mountain top in this heavy brush almost as much as in the timbered portions.

In the mountains the blacktail roves to the highest points on which there is soil enough to show his footstep; and often, where there is not, the mark where his sharp feet have scraped upon the rock may be seen. But these tracks are made mainly at night, and apparently the deer goes there out of curiosity. The maker of such tracks is hardly ever found there by daylight, nor does he leave any bed or other sign of staying long. He spends the day far below, where the arctic willow nods over the bubbling spring, where the snowy columbine gives place to the red one, where the tiger-lily flames in the little green meadow and the mountain-alder rears its brilliant green. But even this is too high for most of them. For, unless much persecuted, the majority of deer will be found, not where the chinquapin is dwarfed by cold to a mere mat along the ground, on the top of which one can almost walk, but where the sunny tinge of the golden-leaved live-oak warms the heavy shades, where the sugar-pine bends its

flattened crown over the tall shaft of the incense-cedar that rises red and shaggy from the hillside below; and even farther down where the alder weaves arcades over the hissing brook in which the trout begin to flash, where the call of the mountain-quail rings along the tumbling hills, and the wings of the dove whistle through the silvery sheen of the fir. From there down to the foot-hills, and in their shaggy pockets, and so on to the very shore of the shining sea, this deer will be found wherever there is cover enough to furnish hiding.

Before the snow is deep nearly all the deer leave the high mountains, and in the Cascades most of them start even before the falling of any snow that is to be permanent. They wander down into the lower and more brushy portions of the range, sometimes on well-defined trails, but quite as often without any. Here, too, there is plenty of snow on the higher hills, and most of the deer keep in the lower flats and brushy gorges or go on to the Coast Range. Here they join a number of their fellows that did not go to the mountains, but remained all summer in the Coast Range. The principle on which only a portion of these deer travel so regularly to the high mountains every spring is not known. It is plainly not for want of food, for the necessities of breeding, to escape gnats, flies, or other such

cause; because the numbers that remain are very great, and they fare as well and keep as fat as those that go away. In some places, as in southwestern Oregon, the number remaining is plainly greater than those that depart, and the hunting is better there than in the Cascades to which the others have gone. When they return and unite with those that have stayed, their numbers are often very great, and on snow it is very easy to kill several in a day. It is under such conditions that the mighty hunters of Oregon do much of their work. It is mainly by loafing along the trail during the migration that "Old Bill" So-and-so kills three hundred a year. And "Old Pete" What-you-call-him goes a hundred or more better by following them to the coast, where he used often to make his winter camp and slaughter deer solely for the skins. As much of the migration is during the rutting time, when the bucks are more careless than usual, it is an easy matter for one with the patience to sit on a log and wait, to kill plenty of game by simply knowing the lines of migration. And these they often narrow up with a brush fence, along which the deer wander far if undisturbed rather than leap it. Here at an opening the butcher is often placed on a scaffold; and the world thinks him a mighty hunter because he kills so many, a wondrous shot because he does it with the old-fashioned Win-

chester. But in spite of all, plenty of deer are still left on these ranges, and will be to the end of time. There are too many million acres of timber and brush the plough can never invade; and the heavy hand the law has now laid on the game butcher, and the market-shooter, and the skin-hunter will only tighten its grip as the years come.

As we go north from the southern part of Oregon the timber becomes more dense with the increasing rainfall, and the bushes whose twigs the deer loves become more scarce in the sombre shades. The deer does not like to go far for feed, and likes it tender and succulent, and the great ferns which rise out of the gloom and dampness are not to his taste. The blacktail is therefore growing scarcer. Though still found far in the north, it is in limited numbers, and in places he disappears almost entirely. Over the greater part the timber is becoming such a tangle of fallen trees, broken limbs with spots of swampy ground, through all which so many big ferns and other things that love damp shades struggle up higher than your head, that real pleasure is nearly out of the question even if game were very abundant. Feed for your horse is too scarce and too hard to carry even where a horse can travel well. And a hundred deer might stand within a hundred yards without your seeing one of them, while as many dogs might run them in as many

directions without giving you a shot that you could make except by chance. The best hunting is farther south, where the timber is more open and the brush lower. Nothing can surpass that part of southwestern Oregon which the blank space on the map shows unsurveyed, especially on the head waters of the Coquille River and in the Rogue River Mountains. It is so rough that the hunter almost never goes there, while the scarcity of feed in places makes it no trifling matter to keep your horses strong enough to take you out again. But it is a grand, picturesque country, the natural home of the elk as well as the deer, abounding in grouse, mountain-quail, and trout, and well worth a visit by one who wants to see the wild and the new, far beyond the orbit of the tenderfoot or his stylish guide.

Like other deer the blacktail rarely touches grass. He loves the tender leaves and twigs of the salal, huckleberry, and other shrubs that abound on the greater part of his range. So numerous are these that he can always get enough, and you need never trouble yourself to know what he is living on. It will cut very little figure in your hunting, and aid you very little in tracing a deer's movements as it often does in many other countries. In a few places their movements might be influenced by acorns in season, but for only a short time, if at all.

The same is true of the water. Springs and creeks are so common on most of this deer's home that its movements are little affected by watering, while the browse is so succulent on a thousand shrubs that it often goes days or weeks without drinking at all. For these, and other reasons hereafter noticed, the hunting of the blacktail lacks the attraction that the Virginia deer affords in many parts of the East, and the mule-deer in many parts of southern California. There is too much ground on which there is nothing to do but rove the woods and shoot when you happen to see something. This is tame beside working out the whereabouts of your game by your knowledge of its habits, and matching your skill against its wariness from morning until night.

The habits of the blacktail are much the same as those of his family in general. Mainly a rover of the night, he prefers a good moon, though quite able to manage his legs in the deepest darkness. During the ten or twelve days when the moon is the brightest, you may find plenty of fresh tracks in the morning as soon as it is light enough to see. But the area you can traverse without seeing one of the deer that made them is quite as astonishing as it is elsewhere. Having been induced by the moon to be on foot most of the night, the game has a full stomach, all the

exercise it needs, before daylight, and has wandered off to some good place to lie down for the day. This early lying down often causes more early rising in the evening, but as a rule even the evening hunting is very unsatisfactory when the moon is at or near the full.

The nature of the ground is generally such that it is very difficult to track this deer except on snow. To track to advantage without snow the ground must be free enough from vegetation to enable you to see several yards ahead on the trail. For if you have to keep your eyes fixed on the ground near by to pick out single tracks, your work is far too slow, and you have not the range of vision needed to see the game before it can see you. This alone calls for all the eyesight you have. On ground where the movements of deer are quite regular it is not necessary, and seldom advisable, to keep on the trail all the time. It should often be left in places and a detour made to avoid wind or get a better place of observation, or a bit of ground where you will make less noise. In such case, by your knowledge of the deer's habits, you can generally pick up the track farther on. But on the home of the blacktail the ground is generally so covered with grass, herbs, or shrubs that the trail cannot be seen at a glance even by the best-trained eye, so that tracking without snow is entirely too slow.

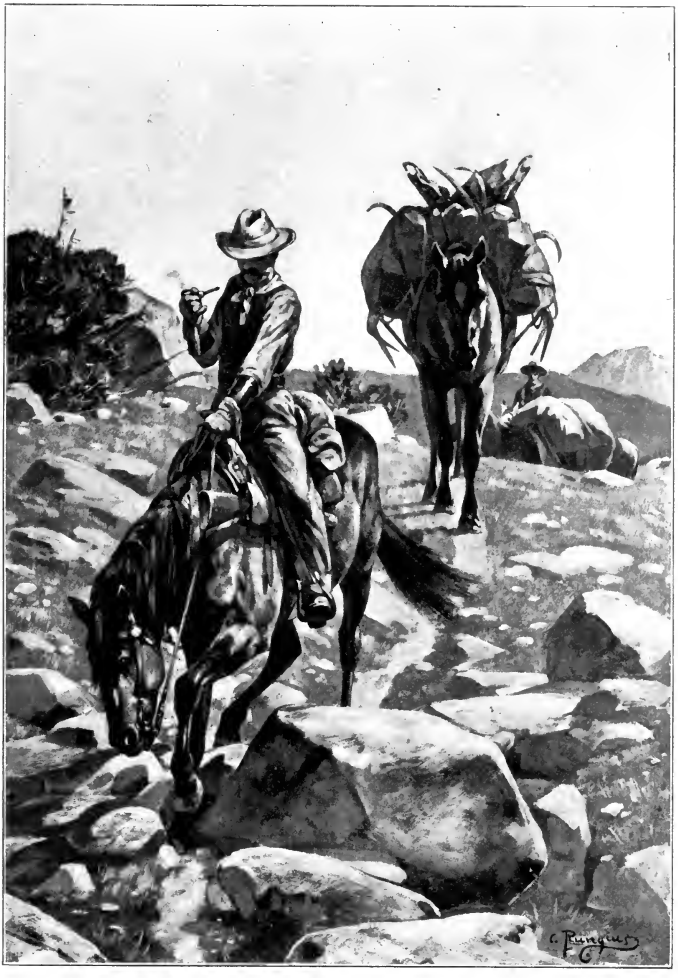
Like other deer this child of suspicion so quickly learns the difference between the step of a horse bearing a man and the step of one without that little can be gained by hunting on horseback. The knowledge seems almost intuitive; though, if belled cattle are ranging the woods, deer can be deceived by a bell on the horse, and also by a bell on the man without a horse. But this does not last long, and only the first inventors of the trick are likely to profit by it.

The blacktail is also a difficult deer to drive, surround, or cut off. Though if left alone he will generally take an easy path, like the mule-deer he will go anywhere when alarmed, and is quite likely to go where you least suspect. For this reason there is no use in two or more trying to hunt together except in rare cases around some point or some brushy basin where one may go around to where the deer may come out. The surest way is alone and on foot.

On most of the territory covered by this deer there are few places where one can stop at a house and go out in the morning or evening with much chance of a successful hunt. Farm-houses are not scattered through these great woods as they once were in so many parts of the East. A pack train is generally necessary, for there are not many places where good hunting can be had even with a wagon. Although you

may not be a butcher or care a cent for "heads" or "trophies," which generally mean throwing away a whole animal, you may still have a pardonable pride in shooting at a little more than you can yourself consume. If so, you will probably be unable to give the meat away, and find very little fun in turning the camp into a butcher shop to dry it. I have been in the Coast Range of Oregon for three weeks at a time where I could see from ten to twenty deer a day in merely riding through the woods. There was nothing to do but look at them, however, for not a sign of man or any of his works was there for many a long league. All this is very pleasant, and, for those who have had a surfeit of hunting, as good as shooting, but it does not satisfy the majority of hunters.

In many other places the timber and brush are so dense that, though deer are very plentiful, there is nothing to do but wait around some opening for a deer to come out. To one who loves the chase solely for the opportunity to play his wits against the shrewdness of the game, this is intolerable. For such the remedy in either case is to select big bucks and start them going. When the Columbia blacktail starts on his ricochet course through fallen timber or rocks, or even on quite open ground, you are in no imminent danger of being troubled by the question



THE RETURN FROM THE HUNT

of what to do with your game. For you will find many unsuspected rocks to dash your bullet into leaden spray, and many a big log to absorb it just about the time the game vanishes in graceful curve over its top.

Subject to these limitations, the hunting of the blacktail is in many ways the finest now to be found. On much of its range, such as the upper tiers of the Cascade Range, the grass is so plenty you can camp almost anywhere, while the woods are generally so open that travel alone is a delight. Here are meadows and open glades around which in summer you may see many a pair of velvet horns rise from the low brush when the sunlight begins to gild the tips of the towering pine, with plenty of ridges just right for walking and commanding a good view of the slopes below. Mosquitoes, flies, and other torments are almost unknown; cool nights and bright days that are none too hot are generally a certainty; and while rain is a possibility, it is quite safe to start on a long trip with no tent but the starry sky, as in the greater part of California.

The eyes of the blacktail seem fully as keen as those of the Virginia deer, but, like the mule-deer, he is not so easily started by noise. This is not because his ears are at all inferior. He is simply taking chances instead of leaving chances well in the rear, as the Virginia deer generally

does nowadays. Nor does it prove that quiet walking is not important. On account of the nature of much of the ground you must make considerable noise, or you cannot move fast enough. And you will find many a deer that must have heard you coming, but does not run without waiting to see what you are. These deer hear you and are generally calculating on outwitting you by hiding. But they often change their minds when they find you coming closer, and too often they cannot resist the temptation to stop a second to see if it is really worth while to run at all. After much hunting they learn to act on the presumption of danger; but even then you occasionally meet a very great fool of a deer which will persist in staring at the new rifle of the rawest tenderfoot that ever, with hobnailed boots, smashed dead sticks it was more easy to step over. Meeting such a deer often makes the novice think he is a born hunter, but if he will keep on a while he will recover from the delusion, and begin to wonder what has become of his keen eye and steady hand.

One is apt to conclude that noise is of little account in hunting; but time will surely show that, for every deer he sees when making a noise, two or three slip away before he can come within sight of them, some in full bound, whose tracks he may find when too late, others sneaking quietly

off into the brush, that would have remained in the open had they not heard the step of man.

For much the same reasons many think the keenness of a deer's nose overestimated. But the more one hunts the more one will be amazed at the distance a deer can smell a man on a very light breeze, and the quickness with which it will run as well as the distance it will go before stopping; for when a deer runs from noise it is often mere suspicion, he is not sure what the scent is. The same is sometimes the case when he runs from the sight of a man, though not so often. But when one runs from the scent of man it is because he knows full well what it is. He stops not to farther question, and is so fully satisfied at once that you are not likely to catch sight of him that day. And this sense is so transmitted by descent that the youngest fawn to leave its mother will run from the distant scent of man without stopping to look back until well out of sight. This seems in many cases almost absurd, and especially where the air is so deadened by heavy timber that there is no apparent motion in it. But the exceptions are caused by cross currents that carry the scent away, and not by any lack of keenness in the nose of the deer, or by any lack of fear when the first particle of scent strikes it. In this respect the blacktail is as hard to circumvent as any of his family.

Like other deer, this one is very stupid about making out the figure of a man at perfect rest, but amazingly quick to detect his slightest motion and know what it imports. There is no way of avoiding this, and between deer and hunter the advantage lies with the one at rest when the other comes in sight. Not much can be gained by wearing clothes of any special color. Dull brown or gray are less striking colors than others, though turkey-red or something no fool can mistake for a deer are nowadays more desirable. In timber, even with plenty of snow, deer can see you so plainly when moving across the trunks of trees that there is no perceptible advantage in white clothes.

The most difficult trick of the blacktail to circumvent is his hiding or skulking in brush, and letting you pass very close to him, well knowing you do not see him. All deer seem to learn that in very dense cover this is generally safer than running. I have had the Virginia deer lie still in the long slough grass of the prairie and in the reeds of river bottoms until I was within a few feet. But the deer of the Pacific coast escape in this way more than deer elsewhere, especially in the heavy chaparral which robes in eternal green so much of the southern part of the range of the blacktail. Nor does he require such dense cover for this purpose as one would imagine from expe-

rience with the Virginia deer. In a little valley of a few acres in the wildest part of the Coast Range of Oregon we camped at noon, and two of our party went out to shoot some mountain-quail which were running about in all directions in great numbers. One had a shotgun and the other a twenty-two rifle, with which they fired fully thirty shots, besides making a great amount of noise. For an hour before that our party of four had been making the usual noise incidental to stopping to camp and get dinner. After dinner I set out for the woods with my rifle, passing within twenty feet of a clump of brush some fifty feet in diameter. The brush was thin and stood alone well out in the valley, the rest of which was covered with grass. My two companions had been shooting all around it. After I was well past it, a large doe bounded out of it in full sight of all of us, and vanished like an arrow in the dense timber on the side. As we were many a league beyond the last sign of man, fresh or old, it was not likely that that deer had ever known much of the ways of man.

A "slow-tracking" dog, or bird dog trained to point deer the same as birds, is the only thing you can rely on in still-hunting to find a skulking deer. For if the ground is such that you can follow the trail yourself, they will often sneak quietly around, if the brush is large enough in

extent, or slip out of a small patch with head down and noiseless trot, where it may take you too long to untangle the network of tracks so that you can be sure to find the track on which it slipped away. Such a dog is hard to get in training, and harder still to keep on account of the great temptation to let him chase a crippled deer some day when you want venison. Very few dogs can be indulged in that amusement without becoming speedily convinced that you know nothing of hunting, that you are entirely too slow, and that the game is sure to escape your antiquated methods. Especially is this the case on ground where it is expedient to leave the trail for a short cut, or for some better point of view, or to avoid wind, and pick it up farther on. The temptation for the dog to show you he knows better is very great, and if he has the wind of the deer, he is very apt to slip away and find the game at his best pace. Still more apt is he to break away after the first shot, especially if the deer is wounded or is in plain sight upon an opposite hillside.

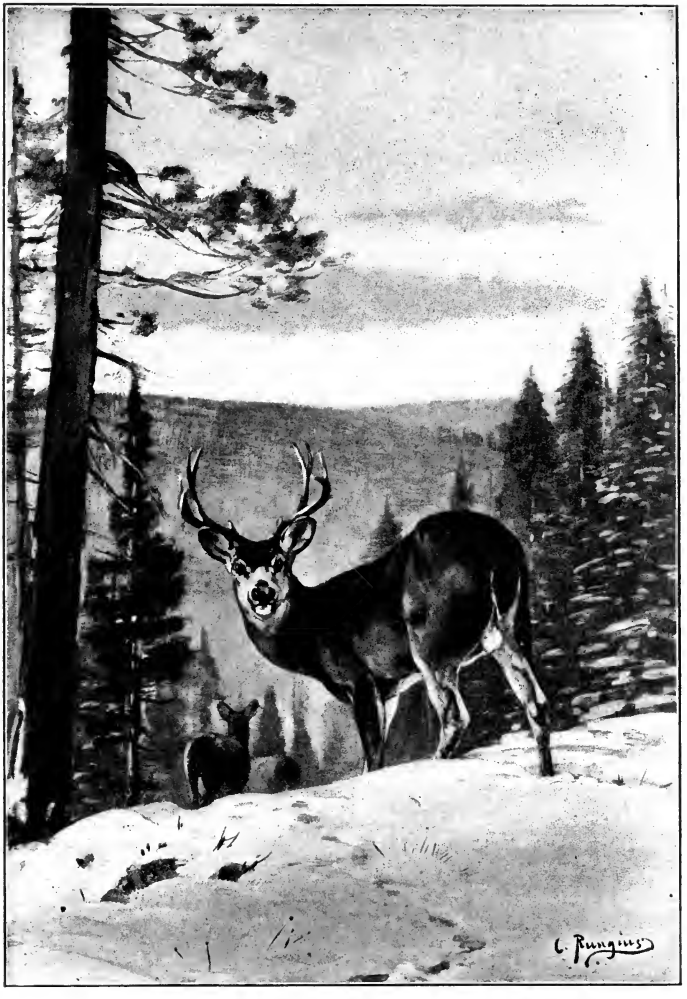
Nothing sets a dog more crazy than catching a crippled deer. By allowing this just once in each case I ruined three of the best dogs I ever had — one a Laverack setter, one a hound, and one a Scotch terrier, all trained to point deer and all docile and obedient in all respects until I yielded to the temptation to let them chase a cripple that

was a little too fast for me. Before that they would point as well as any dogs on birds; the setter just as if on birds, but with nose far higher, the hound by sitting up on his haunches and looking around at me and tossing his nose high in air, the terrier by rising much of the time on his hind legs and sniffing high in air. The first two I could trust a hundred yards ahead with perfect safety. The terrier I kept mostly at heel, but in another year he would have been as safe to trust ahead as the others.

The bird dog seems best adapted for this purpose because more likely to take the wind rather than the foot-scent. But the work of "a slow-track dog" is quite as effective in most cases and just as interesting. He is generally some old hound or combination of hound and mongrel that smells his way across bushes, grass, and weeds, even of the dryest, in a manner quite marvellous. The way he can smell the touch of a deer's leg against a single spear of grass when the track shows you that the deer passed hours before, is as interesting as any of the sights of the field. With such dogs you can enjoy hunting almost as well without the rifle as with one. No training seems required except to let the dog know what you want by ignoring all other game and keeping him absolutely at heel until he has outgrown the temptation to chase anything.

In the sense in which success is understood in most parts of the East, driving this deer with hounds can hardly be called such on the greater part of its range, while on much it is quite sure to be a failure. There are places, like The Lake of the Woods or Diamond Lake, where it could no doubt be driven to water. But still-hunting is there so much better, it would be foolish to take dogs so far. In parts of northern California dogs are often used to drive deer out of heavy brush. If this is in a basin surrounded by ridges on which men can be posted so as to have a fair view of the proceedings, this will do very well. But on the greater part of the Pacific coast, deer have no regular runways as in many parts of the East. Though they prefer open places when not in haste, when they are in haste they go anywhere. In dodging into unsuspected ravines, twisting around big rocks, and dashing over big logs, the blacktail is equalled only by the mule-deer. In heavy brush and rocks the mule-deer can far surpass him, but on most ground the blacktail is as much ahead of the Virginia deer in this respect as the latter is in flirting his snowy tail over some distant ridge at the first crackling of a dry twig under the hunter's foot.

On the southern part of its range hounding the blacktail becomes even more difficult in many places on account of the scarcity of water. When



THE BLACKTAIL OF THE COLUMBIA

the air is hot and very dry, the dog's scent is soon impaired by running, especially in rough or brushy ground. He does not pass water often enough to drink, and has few or no wet weeds or grasses to run through to wet his coat. Hence still-hunting is in most cases the more satisfactory way of hunting.

As is usual in all still-hunting, the greater number of deer are lost by the inability of the hunter to see them before they can see him. On the enormous background on which most of the blacktail must be detected by the eye this is even more difficult than in most of the woods of the East. Almost everywhere in heavy timber it takes the finest of eyesight to see a deer before he is descending over some distant log or wheeling around the upturned butt of some great fallen tree — gone just as you raise the rifle and often before. The deer with individual hairs glistening on its back, with dew claws and even the split in the hoofs all in plain sight, exists only in the mind of the artist of pavement education. No such animal is seen in nature. Nor does the deer in the woods correspond much better to the picture you have formed in your mind from seeing a deer in a park or stuffed in a museum. Generally you see none of the legs, and unless the game is in motion rarely see more than half of the body. But at the time you most want to catch sight of it — before it can

see you — a deer more often has its head down like that of an old cow, or stuck in a bush feeding, or out of sight around some log from which the shoulder or other part of the body can hardly be distinguished. Except when he raises his head, once in a while, to look around for danger, the most shapely old buck has none of the graceful form of the artist's deer, but is more often a mere spot or patch of brown, gray, or even nearly black, with some white occasionally showing. The consequence is that it takes long training of the eye to see such an animal quickly enough to get a standing shot, if it is at rest, while to see one lying down is only a rare accident in the woods. And even from the very best eyes the majority of deer escape because they are so very quick to detect the slightest motion of the hunter, who has to keep moving in order to cover enough ground.

All these difficulties are increased on most of the ground that forms the home of the blacktail. A deer always looks small enough over the sights of the rifle, but among the great redwoods, Port Orford cedars, sugar-pines, and firs of this coast the blacktail often looks more like a rabbit. For this reason there are vast areas on which true still-hunting is about impossible. Fire-hunting could rarely be a success, for lakes are not abundant on most of the range, while nearly all the streams are too

swift and turbulent for floating. And it is also quite certain that the deer of this coast does not have the love for water at night the Virginia deer shows on most of its range.

Very little can be done by making a salt lick or using a natural one. On much of this coast deer will not lick salt at all, while on other parts they do it very sparingly. Such hunting is too slow for the market-shooter and too tame for the sportsman. But there is still enough open and beautiful territory to make the hunting of this deer one of the most charming amusements the land beyond the pave can offer. And there is no more stirring target for the rifle than this trim little creature leaping the fallen trunks of the great trees that shade its home. Nature presents no fairer sight than the Virginia deer leaping the logs that lie piled here and there in ruinous confusion in the windfall. But that deer runs like a horse, and the logs are small compared with those in the home of the blacktail. The blacktail is a bouncing deer — all four feet striking the ground together, and throwing the animal much higher at each stroke than it would rise in a canter. Hence its course is often the wildest ricochet; and, though it waves aloft no snowy flag as if in mockery of your hopes, the elevation of the head is greater, while you can easily imagine the big bright eyes watching at the top of the spring your vain efforts

to connect with the delusive curve. For one who loves the rifle as much for what cannot be done with it as for what can, there is no finer target than this. When on the ground it is out of sight, and so quick is its twist from side to side that you have no idea where it will again appear above the logs. Nor will it avail you much if you do, for by the time the fur comes into sight at the top of the next lofty curve you have no more than time enough for a snap shot. And should you succeed in getting the sights on the exact centre when you fire, the mark is certain to be above or below that point by the time the lead arrives. Try to avoid this by aiming lower, and the bullet may send the bark flying under the deer's legs with a whiz that switches him on a tangent, and disarranges all the feeble calculations you have so far been able to make.

If you aim higher as the deer is rising, you then tempt another danger, always too great — overshooting. There is no royal road out of the difficulty, and even when you hit one in the head or back of the neck, although it is quite certain you did not aim there, your pride is quite pardonable, and you will love the windfall only the more. It is just possible, too, that you may be mistaken about the importance of hitting something all the time. It took me eleven days where deer were very plenty, thirty-five years ago, just to get sight

of the first deer. It was more than eleven more before I was able to hit one. Yet I never enjoyed anything so much as the consciousness that the game was all around me and that only my own stupidity was at fault.

At first the tyro wants a deer and cares very little how he gets it. Well, there are everywhere plenty of open places, until you get far into the North, where the openings are too barren or deficient in such shrubs as the deer loves. But everywhere on the southern half of the playground of this deer there are grand open ridges only partly covered with timber, having long avenues down which you can see clearly for many a rod. So there are sunny slopes on which deer stand to catch the morning sun before going off to lie down for the day, and big shady flats where on a hot morning they may stay as long in the shade before going to rest. Then there are plenty of sharp ridges ending in points over which the chinquapin waves, with the grand madroño and the laurel, but with plenty of open spots on which the deer will often stop to survey the landscape as he comes up from below, and where, in cool weather, he prefers to lie in the sun rather than in the depths of the timber.

As a rule it will rarely pay you to look for this deer in bed. In this respect he is the worst of his tribe. Unless you have snow to track on, or

bare ground where a track shows several yards ahead so that to the practised eye the trail appears to stand up out of the ground, it is rarely worth while to look for one in bed. To see them is next to impossible on most ground, while jumping one out of bed in such a way as to get a shot is almost as uncertain, and pays only when you have nothing to do but tramp. Especially is this the case with the blacktail. It has a greater variety of places for lying down than any other deer, and they are scattered over a much larger area. In the greater part of the woods it may lie down anywhere, and even in the open country there is still so much brush into which it is quite apt to go, that you had better confine your hunting to morning and evening.

And you need not expect much success early in the summer. For the blacktail has everywhere the same period of seclusion that other deer have, especially on this coast. In May and June and the early part of July they move very little, and that generally by night. Not having to go to water to escape flies or mosquitoes, or for drink while the young leaves are tender and juicy, they remain most of the time quiet in the deep thickets, rocky glens, and rugged gulches or windfalls, where you may generally make all the noise you wish without making one even run in such a way that you can see him. Even tracks may be so

scarce that you may think they have all left the country.

But toward August deer begin to move about more, until it sometimes seems as if there must have been a migration from some distant point. The fawns are now large enough to take care of themselves, and though they may stay with the mother, she does not hesitate to leave them and they are equally indifferent about losing her, both well knowing that it is an easy matter to come together again. The rutting time is also beginning along the coast and in the midland ranges, though it is later in the mountains. Consequently the bucks begin to move over a larger area, stay on foot much longer in the morning, and rise much earlier in the evening. Deer now seem to love open ground as much as they before avoided it. Far away your eye may catch one by the sheen of the sun on his lengthening hair, or, if in shade, you may see him equally well by the dark spot his autumn coat makes against the ground. It takes keen eyes to do even this, and still keener to detect one in brush by the faint movement it may make in feeding, or when it shows only one ear, round as a lobe of prickly pear and very much like it, or when there is but a bit of rump with the little black tail projecting from a bush.

The action of the bucks during the rutting time is much like that of the other deer. The does

act about the same as at any other time of year, but the bucks become more careless when on foot, travelling faster and farther, feeding less, and remaining on foot even during the whole of the day at times. During this time you may often see them on foot in the middle of the day, though they have probably lain down and risen again, unless on trail of a doe. In the latter case they are quite careless and fall an easy victim to one who happens in the way and can keep cool. Sometimes several are on the same trail, and the sound of the rifle that brings the first to the ground has little or no effect on the others if they do not see the hunter move. But unless a buck is on his travels, he is apt to be as wary at this time of year as at any other, as when he is feeding, or has gone off to lie down for the day. It is not safe to be careless in any respect even at the height of the rutting season, or "running time" as it is generally called.

Like other deer the blacktail watches its back track after being started, but I never could see that they watched it before being started. Even in lands as wild as Minnesota and Wisconsin were thirty-five years ago I soon discovered that the Virginia deer knew enough to watch its back track before being alarmed, and in places practised it so well that it could be tracked successfully only by half circles, keeping on the side out

of sight of the trail and swinging in only often enough to be sure I was on it. The blacktail often lies down on points that command a view of the back track as well as a much larger area, but I cannot discover that it is done purposely, and on all its range it is probably safe enough to keep on the track, where you can follow it at all.

The blacktail is a smaller and more graceful animal than the mule-deer, bearing much the same relation to it that a thoroughbred Jersey bears to a Durham. But this is only when you compare the two side by side in a park. In the woods none but the expert can note the difference, and it will puzzle him if the deer is running. Though its ears are larger than those of the Virginia deer, being nearly seven inches long by six wide on a big buck, or nearly an inch larger each way than the ear of the Virginia, it is in other respects even finer-limbed and neater-looking. Its forehead is broader, and its nose a trifle sharper, with the intervening bridge narrower, making a more expressive face, which is still farther beautified by large bright eyes, that outshine those of the other deer.

This one varies greatly in size and form, scarcely any two individuals being alike. All that I have seen average decidedly smaller than the eastern deer that I have known. I never weighed one or got figures from any one that

are reliable. But I am certain that very few of the bucks will weigh over one hundred and twenty pounds, dressed. Does are not likely to run over eighty or ninety at best. The length of a good buck from tip of nose to root of tail as he stands is about five feet three inches, with a girth of three feet at the shoulder. Its height at the brisket is about eighteen inches, or about the same as the shank of the hind leg. More will fall short of these figures than come up to them, though some are longer legged, and some longer or deeper bodied than others. The red or bay coat of early summer has a richer tinge than on the Virginia deer, and more of this remains visible in the gray coat of winter than on the other. In other respects the coat is much the same.

Always bad enough as an index of age in any deer, the antlers of the blacktail are still worse. They are generally delicate and well proportioned, but most of them are merely forked horns, presenting few points compared with the age of the buck. A good pair will be twenty-two or three inches long, with a spread of two feet or even more, though it is often less. What in the East would be called a very fine head is rare among these deer.

A careless eye would note little difference between the tail of the blacktail and that of

the mule-deer. But it is considerable. Both are of about the same length, rarely over seven inches, and in marked contrast with that of the Virginia deer. But the tail of the blacktail is nearly uniform in size from base down, except at the tip, which comes to a sudden point with a slight upward curve. It is quite black on top, and about halfway down this shade spreads around to the sides, shading into brown, and that into white on the under side. This white is wider at the root, narrowing to the tip, which is nearly all black except for a few brownish-white hairs. The tail is round and quite even in circumference as compared with other deer tails. It is carried a little higher than the tail of the mule-deer, though this cannot be noticed unless the animals are at rest. There is little or no elevation of the tail in running, and when the blacktail is under full headway one would hardly suspect it had a tail.

The feet are so nearly of the same size and shape as those of other deer that one cannot tell the difference in the track. And its general habit of straggling here and there, crossing and recrossing its trail as it gets near the time for lying down, is so like the movement of the mule-deer, that when one is on the border line of the ranges of the two it is impossible to tell by the track which one made it.

Though these two range together over a considerable space near the centre of California, and the rutting time is there about the same for each, I can find no evidence of the two intermingling. It is possible that they do, for one must be something of an expert to detect a hybrid. The ordinary hunter is too intent on meat, hides, or heads, to notice such trifles as the tail. Without this one could be easily deceived. But it is probable that they do not mix, for careful examination shows them essentially different deer.

NOTE. — Much that has been said of the hunting of the blacktail applies as well to the mule-deer, while much of the article on the mule-deer applies as well to the blacktail. To repeat the same under each would be tiresome to the reader, and unnecessary for those who already know enough of deer to be interested in these two varieties.

THE CARIBOU

By Daniel G. Elliot

THE CARIBOU

Among the larger members of the deer tribe inhabiting North America the caribou may fairly claim a place. Less imposing in appearance than the gigantic moose or majestic elk or wapiti, and, when undisturbed and removed from danger possessing a careless, indeed a slouchy carriage, yet this deer, with his often splendid antlers, palmated and many-pointed, his hairy muzzle, peculiar among the deer tribe, and deeply cleft hoofs, and his compact, sturdy frame, is one of the really notable wild denizens of our northern forests and wind-swept arctic plains. His range in North America, under various names, is as wide as the continent itself, and extends from the northern borders of the United States to the Arctic Sea, the Barren-Ground animal not often passing south of 59° N. lat. although in 1856 they migrated to latitude 47° in great numbers to Lake Huron. The Woodland do not go north of 60°, and probably only a comparative few reach that latitude.

Caribou are divided into two classes, the Woodland, embracing those which are habitually dwell-

ers of the forests, rarely venturing any distance from the shelter of the woods; and the Barren-Ground, or those inhabiting the vast tundras of Arctic America, which regularly migrate from the forest to the open plains, and seek the depths of the woods only as a refuge from the fierce storms of winter. When moving slowly along, nipping a tender branch from a wayside bush or seizing a mouthful of moss from the wet "savanne," the caribou, with low-hanging head, apparently overweighted by the great antlers, the hoofs clicking as with lazy effort they are successively drawn from the reluctantly yielding ooze of the marsh, presents anything but an attractive appearance. Yet look at the same individual when the tainted air brings to his sensitive nostrils the scent of a dangerous adversary; how changed he suddenly becomes! The listless, careless pose gives place to one animated and full of spirited attention; the head is lifted and carried proudly aloft, crowned by its noble weapons of offence and defence; the ears, from their drooping attitude, the tips directed backward, are thrown forward and seem to quiver with excitement as in quick movement they seek to locate the avenue of the enemy's approach; the legs are rigid, each muscle drawn and tense, ready to respond to the first call for supreme exertion. And then the foe appearing, how grand and animated is the animal's move-

THE CARIBOU OF THE BARREN GROUNDS

ment as, in a stately trot, with head and tail uplifted, the clicking hoofs, like castanets, beating time to the swift action of the limbs, the proud deer passes rapidly from view over the yielding moss of the treacherous swamp. The Woodland caribou is a shy, suspicious animal in those localities where he has had the opportunity of making the acquaintance of his great enemy, man, and when frightened and fully satisfied that danger is near, he will never cease travelling until he has placed a great distance between himself and the cause of his fears. Restless in the extreme, they are ever roving the forest, and travel many miles every day and night.

In order to consider the habits of the caribou, it will be necessary to divide them into their two classes, the Woodland and the Barren-Ground, and take each separately. While numerous species and races have been made of these, by those who believe that the infinite variations of nature must be followed by an infinity of names, yet for the purpose of recounting the caribou's mode of life all these deer, irrespective of their habitat, are practically one species, for their ways differ only in degree. The Woodland, which we will first consider, as their name implies, are mainly dwellers of forest lands, and are usually found in the swamps, where the trees are few, though their margins are bordered by the dense woods. In

such places they find in abundance the moss which forms their chief subsistence, and also in the proper season the buds of various shrubs of which they are very fond.

In the spring the Woodland caribou seek the sides of the mountains, and in summer are usually found near their summits, hiding during the day in dense thickets, coming out at night to wander about their chosen locality. At this season the horns are tender and in the velvet, and the animals do not roam about much, food being usually plentiful on every side. Should there be a lake in their vicinity, which is indeed usually the case, its banks, that are generally muddy, will be found each morning covered with the fresh tracks of the deer that have wandered around it during the night. The woods also that are much frequented by caribou have many well-beaten paths ramifying in all directions through them, made by these animals in their marches from place to place; and to follow one of these is not only to find, often, the only method of traversing the forests, but the shortest way of reaching some desired spot, for the deer seem to prefer a direct route between two points. The female caribou, which also carries antlers much smaller and weaker than those of the male, brings forth her young in the spring usually one only, but occasionally two are produced — miniature representatives of the adult animal. In the

autumn short migrations northward are made, and the higher parts of the mountains are deserted for the valleys where food can be more readily obtained. The summer coat is a dark gray or mouse color, with a white caudal patch and white under parts. The depth and shade of the darker hues varies greatly even among individuals from the same locality, and the size of the caudal patch is rarely the same in any two individuals. In winter the neck becomes nearly pure white and the body is often of a very light hue. The antlers vary to a degree that is absolutely without limit both as to size and shape, and not only do those of different individuals vary, but the two beams with their tines exhibited by any deer differ from each other, and the yearly antlers of the same caribou rarely have any resemblance one with the other.

The methods of hunting the Woodland caribou are few and simple. In September, after the velvet has been rubbed away, the law generally permits these animals to be killed. At this time, the rutting season is beginning, and the bulls are getting restless and commence to travel the woods seeking the cows, and their hoarse call, something between a grunt and a bark, can often be heard in the early mornings, occasionally even during the day. There is no snow upon the ground, and tracking would be fruitless, for although the

imprint of this deer's hoof in the soft ground is large and readily seen, yet the impossibility of moving through the swamps and bushes without noise would make such a method of pursuit of little avail, as the deer, learning of his foe's presence, would betake himself to distant pastures long before a shot were possible, or even a sight of himself obtained, for, it must be understood, the Woodland caribou, unlike his rather stupid brother of the plains, is a wide-awake and suspicious animal. Still-hunting, therefore, and that of the "stillest" kind, and one not at all usually conceived by the term, is the only one promising success.

This method of still-hunting consists of taking a position in a swamp, or "savanne" as it is usually called, and waiting for the appearance of the deer as it passes by, either in search of food or of other individuals of its species. These swamps are usually surrounded by thick woods, and occasionally are of very considerable extent, carpeted with moss sometimes two feet or more in depth and saturated with water, and the dreary view is broken at intervals by clumps of bushes or small trees scattered here and there at irregular intervals. Upon some fallen log or stump, or bit of moss slightly drier than the rest and partly hidden from view by surrounding bushes, growing or artificially placed, the hunter seats himself and

prepares for a long vigil, perhaps lasting the entire day. Oh, the weariness of it! Afraid hardly to move, every sense alert and on the strain, listening for the unmistakable "squash" of the deer's hoof as it is drawn from mud and water, fearing to smoke lest the telltale perfume announces one's presence to the watchful game, and mosquitoes and black flies having a merry and never ending banquet from every exposed portion of the hunter's person unless thickly covered by some anti-poison abomination, pursuit (if it can be called) of this deer at such times and in such places cannot be considered either a pleasure or within the true meaning of sportsmanship. If the caribou should wander that way, and the chances are ten to one it will not, a point-blank shot at a few paces is afforded, requiring about as much skill to bring down the quarry as it would to shoot a cow in a barnyard.

Frequently, too, even although it may be as late as the middle of October, so irregular are these deer in shedding the velvet from their horns, that after enduring the torments of foes in the air with their varied means of torture and those arising from stiffened muscles and cold winds, the hunter may only be rewarded by an animal carrying the coveted antlers not yet come to their matured perfection. But even then few complain, for the vast majority of these "hunts" draw a blank, the

chances being so very few of the deer in those vast marshes coming where the sportsman has located himself, and if it does draw near, the hunter's presence is likely to be detected in time for the animal to make its escape.

Another method, and one that savors much more of true sportsmanship, is stalking. In many parts of eastern North America, vast tracts of treeless land, covered with rocks and moss, are found within forest districts, called "barrens." To these the caribou resort, sometimes in herds of hundreds of individuals, while in the forest only a comparatively few animals are found together. The hunter from some point of vantage sweeps the ground before him with a powerful glass, and when some fine "head" is discovered, methods for getting within shot of the animal, possibly a mile away, are considered and a plan of approach determined upon. Then follows an exhibition of a hunter's skill and sagacity against the natural attributes of the deer, whose powers of scent and sight, with those of its companions, are to battle with man's experience and fertility of resource. As the stalk proceeds every rock and inequality of the ground is seized upon as a point of vantage, every breath of air considered lest an unwelcome scent be carried to the trembling nostrils ever ready to detect its presence. As the distance between pursuer and pursued lessens, redoubled

care and vigilance is exercised, and the halts of the hunter become more numerous and of longer duration. In the meanwhile the object of all this solicitude and strenuous endeavor is either quietly chewing the cud as he rests in his grassy bed, scanning at times the landscape before him, or seizing mouthfuls of moss as he slowly moves among the cows, upon whose more watchful guardianship he relies when in their company. But the breeze brings no hostile odor, and quiet reigns, disturbed only by some wild bird's cry as it flies over the barren. And now the supreme moment has arrived, the last crouching movement has been successfully made, the desired spot from which a sure shot could be directed has been reached, and the deer, unconscious of danger, stands proudly erect, gazing over the land he knows so well, at the mercy of his greatest enemy. A rising, fleeting vapor above a near-lying rock, a sharp crack hardly disturbing the silence of the wide barren, and the lordly bull falls headlong to the ground, while the cows, startled, trot rapidly away for a short distance and then turn and stop, to learn the cause of their fears.

One other way of capturing caribou is attempted, and of all those adopted is probably the most successful. This is following the animal on snow-shoes. Caribou are very swift, their gaits being

the walk, trot, and gallop. The one most usual to them is the trot, and the spreading of their great hoofs, which are split apart nearly to the hock, renders them able to carry the animal over snow or soft ground much in the manner that a snow-shoe does a man. In the winter the frog of the caribou's hoof becomes entirely absorbed, leaving the interior a concave shape, the edges all around become of almost razor sharpness, giving the animal a firm hold on the ice or hardened crust, preventing it from slipping. Captain Campbell Hardy, a British army officer who knew as much about caribou and their ways as any man of his time, mentions as a fact, in his "Forest Life in Acadie," that these animals crossed from Newfoundland to the mainland in winter on the ice, and that Nova Scotia animals have been killed measuring four feet six inches at the withers, thus equalling in height the most extreme dimensions of any Newfoundland specimens of which I have any knowledge. On the ice the pursuit of caribou is vain, for it can travel much faster on the slippery surface than any other creature, and if it suddenly sees a new danger ahead it has the habit of squatting on its haunches, and in this ludicrous attitude slides along until the impetus of its pace has been exhausted, and then rises and shoots off in another direction. In the snow its tracks are clearly seen and easily followed. When first en-

CASSIAR MOUNTAINS

British Columbia

CASSIAR MOUNTAINS

Rangifer montanus, N. British Columbia

countered the hunter endeavors to determine the route the animal has taken and then studies the direction of the wind to ascertain if it is favorable for the pursuit, that is, blowing from the animal toward him. If not, before following his quarry, the sportsman makes a détour so that no scent may be carried to the deer, which may be slowly walking along, or resting in some thicket. As the hunter proceeds, eagerly regarding the prints in the snow, the chances are that the deer, one or more as the case may be, will suddenly dash out from some near thicket and disappear before him in a perfect cloud of snow thrown up by their broad hoofs. Then the chase commences, to be decided by sheer endurance or possibly a lucky chance shot at a moment when the caribou may stop and turn to have a look at their enemy.

Unlike other deer, caribou have no difficulty in travelling over light snow, only sinking into the drifts to a moderate depth; and their first endeavor is to reach the frozen surface of some lake or stream, for it is useless to follow this animal upon the ice, as on its slippery expanse it can easily outstrip all its pursuers. Failing this refuge, it plunges on through forest and swamp and barren, and he who hopes to overtake and secure this deer over a snow-mantled land must have muscles of steel and expansive lungs. Instances are known when it has taken several days of constant going

on snow-shoes before the band that was being pursued was finally overtaken. When hard pressed, and their efforts to baffle their pursuers, in woods or swamps or tangled thickets, have proved unavailing, caribou will take to the mountains and seek their summits, thus adding greatly to the toil and exposure of the hunt. In Newfoundland in certain localities this deer is frequently killed in the water, being pursued in boats when crossing lakes, for it is a famous swimmer and does not hesitate to cross a wide expanse of lake or stream.

This method of hunting will probably by some be considered as not altogether savoring of true sportsmanship.[1] But, my critical friend, have you ever tried to follow a Woodland caribou in winter through the forests and barrens, mountains, swamps, and valleys? It is man's endurance pitted against that of the deer, reinforced on the latter's side by its native wariness and ability to baffle pursuit, while the snow-shoe is but little superior to the broad hoofs of the deer in passing over or through snow, and on the ice the hunter is hopelessly outclassed. Many unfortunates have returned to camp weary and worn from a long and

[1] It is emphatically unsportsmanlike to follow caribou or any other of the deer family on snow which requires snow-shoes. On a light tracking snow it is fair and good sport, but when the animal sinks to its hocks it is a cruel game and excusable only when meat is needed. — EDITOR.

fruitless chase at such seasons after this caribou, wiser and sadder men.

In Newfoundland great herds of caribou have roamed for a longer period than the mind of man can fathom; and from their heavy antlers and some other slight characters these animals have been characterized as a distinct species. Migrating regularly to the southward in the autumn and northward in the spring, favorable opportunities were given to hunters to watch for them on their usual routes and kill as many as they pleased, for they are gentle animals in that island and permit one to approach closely before making an effort to escape. But this misplaced confidence in the deer's greatest enemy was fearfully abused, and a single butcher (no other term will properly designate the creature), as I have been informed, killed as many as forty to fifty deer in a single foray, leaving most of the carcasses to rot upon the ground. Then the legislature intervened and passed a law compelling all non-residents of the island to pay a large sum for a permit to shoot deer, and limiting the number of animals that could be killed. Prospects for the caribou looked brighter, and for some years only a fairly reasonable number were killed annually, the limitation in the number that could be shot having cooled the ardor of those whose chief delight was in the shedding of blood and piling

up the bodies of the slain for the scavengers of the forests, more humane than the butchers, to clear away. But a few years ago progress in the shape of a railroad appeared, and the iron tracks crossed the island from St. Johns to Port aux Basques, thus traversing some of the best caribou grounds. The result was a natural one, not only could distant localities be easily reached, but hunters of high and low degree every year scatter themselves in the vicinity of the track across the island, and any luckless deer that attempts to pass the line encounters a fusillade of bullets from hidden riflemen. What chance have the deer under such circumstances to escape death? Only one, and that doubtless will occur to them before they are exterminated: restrict their southern migration to above the danger line, and find peace and safety in the fastnesses of the north.

In their northward migrations in the Arctic regions the Woodland caribou often travel in immense herds, equalling in former times at least those witnessed to-day of the Barren-Ground caribou in certain parts of its dispersion. Over the eastern side of the continent they pass north in May and return again in July, and from November to April, it is stated, they are rarely to be found within ninety or one hundred miles of the coast. They are easily killed when on these journeys, and Richardson states that eighty carcasses were

UPPER MAINE

NEWFOUNDLAND

NEWFOUNDLAND

Rangifer terrae novae

brought into York Factory in one day and many others were refused because they had no salt to preserve them, but the Indians kept on slaying the animals for the skins long after they had ceased to care for the flesh. And this was in the days of bows and arrows and spears, before the advent of the magazine gun and long-range rifle. Weights of individuals of the deer tribe, unless the animal is placed upon the scales, are at best but guesses, and in the absence of any authenticated figures it may be said that a bull Woodland caribou from the Canadian forests in prime condition may weigh as much as five hundred pounds, but of course the average weight will be much less, and probably nearer three hundred to three hundred and fifty.

The Barren-Ground caribou is a smaller animal than the Woodland, and the horns, although perhaps of an equal spread in the majority of instances, are lighter and more slender in beam and tines, and with less palmation and fewer points. This deer is a plain-dweller, and roams over the vast tundras of the desolate Arctic regions, its southern boundary line trending more to the north as its range is extended to the west even to the Coppermine and Mackenzie rivers, and the northern limit of the Woodland caribou is also pushed farther into the Arctic regions, until the ranges of the two forms overlap and the animals must mingle together. The winters are

passed, according to Richardson, in the woods between the sixty-third and sixty-sixth degree of latitude, where they subsist on lichens, moss, and the long grass of the swamps. In summer the herds migrate northward, the females leaving the woods or their vicinity, where they have passed the winter, in May,[1] and are followed by the bulls in June, reaching the vicinity of the Arctic Sea late in May or early in June, and the thick winter coat is shed in July, and the dark brown one of summer is assumed. The hair is at first flexible and soft, but becomes brittle as it grows in length. This, however, can be said of the hair of all caribou, for there is little or no difference in the texture of their coats. The hair near the roots is white, and as it increases in size, both in length and circumference, the colored points are broken or worn away and the lighter color becomes the dominant one over the body of the animal. In spring the Barren-Ground caribou seeks the coasts of the Arctic Ocean and visits its many islands, finding ample pasture in the valleys and moist places, where the withered grass of the previous year is still standing in the form of well-aired hay. The animals remain near the salt water until about Septem-

[1] In all that section of the Barren Grounds immediately east of the Mackenzie River the females leave the timber about March, the bulls following in April. — EDITOR.

QUEBEC

NEW BRUNSWICK

ONTARIO

ber,[1] when the return journey to the wooded country in the south is commenced, and their winter quarters are reached in October. The bulls go deep into the forests, but the females remain near its edges, and leave before the bulls on the spring journey, very early in the year, to give birth to their young near the sea. During the summer the Barren-Ground caribou assemble in enormous herds, sometimes of many thousands, and it has taken more than one day for such a herd to pass any particular place. In certain portions of the Barren Grounds they resort to the vicinity of lakes and feed on tender grasses and various lichens. They are stupid creatures, easily demoralized, and when panic-stricken run aimlessly about, while the hunter in their midst is busy slaying them. Four and five hundred have been killed at one time by a band of Indians, so easily are they rendered helpless by fear. In their migrations these caribou do not always follow the same route yearly, but vary it to the east or west as fancy or stress of circumstances may cause them to change; and because the animals were plenty in certain places one year, is no reason to expect them to be there the next, for it frequently happens that where thousands passed during one

[1] The bulls do not go down to the water, but meet the cows on their return from the coast, and, so far as my observation goes, the herds stay for the greater part somewhat back from the actual coast. — EDITOR.

season, not one may be found in the same district the next. In winter their food consists of lichens and moss, which they obtain by scraping away the snow with the hoof. In the autumn, especially at the end of the rutting season, caribou are thin and in poor condition, and they do not become really fat until the following summer. The greatest amount of fat is found on the back and rump, and is sometimes two or three inches in depth. This is called by the white hunters[1] "*depouillé*," and is highly prized and an article of trade. The females lose this deposit soon after giving birth to their young. The flesh of this deer is tender, and of fine flavor when the animal is in good condition and not eaten too soon after killing. But the flesh of a thin caribou has about as much flavor as a chip, and equally as tender. The Indians and Eskimo depend greatly upon the deer for their subsistence, and every part of the animal is utilized in some way. The flesh, of course, is eaten, the stomach and intestines also; even the points of the antlers, when in the soft condition, are considered a delicacy. The leg bones are broken for the marrow they contain, which is eaten raw, if wood for a fire is not available, and the blood is mixed with meat and forms a rich soup. In

[1] This is a relic of the old-time voyageur and French-Canadian hunter. — EDITOR.

fact, no part of the animal's body that can be masticated is rejected, even the lichens and such vegetable matters as are found in the stomach being also eaten. The skin with the hair on is used for clothing, and no garment so successfully resists the Arctic cold as this, it is so light, and so impervious to the wind, which always blows a gale on the Barren Grounds. When dressed it becomes very soft and pliable, and when a number of hides are sewn together they make an excellent tent for summer, large enough for a numerous family. Cut into thongs of various sizes, it makes very strong bowstrings, wherever those ancient weapons of the chase are still used, and lines for nets and cords for deer snares; when cut into strings it is called *babiche* and is used for shoe-lacing; in fact, it is utilized for the many purposes that civilized peoples employ ropes and cords. A split shin bone makes a good knife, and fish-hooks and spears are made from the horns, while the tendons of certain muscles make very fine and strong thread for sewing with the bone needle.

When travelling during the summer, caribou go in great herds, and the Indians lie in wait for them and kill many when the animals attempt to cross rivers or lakes. Many are also taken in traps or pounds, into which the unsuspecting deer walk through a narrow entrance, which is then

closed, and the animals are killed usually by shooting them from the outside through the branches of the trees that form their prison. Stabbing the animals when feeding on rocky ground is also resorted to, and the Eskimo are such adepts at this method of hunting that they frequently get within a few paces of the game before shooting. Caribou are afflicted with great curiosity, and will approach closely any object that is new or strange, provided it is motionless; and of this weakness the Eskimo takes advantage. Having placed himself behind a rock in the vicinity of some deer that are feeding, he imitates their hoarse bellow to attract their attention; and in a short time some of them will certainly draw near to investigate the quiet figure from near which the sound proceeds, circling round and round and gradually drawing near until one or more usually pay for their weakness with their lives. Probably no animal is so easily approached as are these Barren-Ground caribou in the summer time, and enormous numbers are slain every year, so many, indeed, that it would seem the race must become extinct in a comparatively brief period. In their dispositions they are not unlike sheep in some particulars, especially in following a leader; and sometimes a herd will run the gantlet of a line of hunters simply because one stupid animal had gone that way

BARREN GROUND

BARREN GROUND
CARIBOU HOOF

Showing concave and
sharp edge

MOUNTAIN CARIBOU

This is not the true *montanus* which A. J. Stone reported several years ago and E. Thompson Seton described, but is a new species brought out recently by Mr. Stone and described by Dr. J. A. Allen as the *Rangifer osborni*. It is a very different animal from that described by Seton. — EDITOR.

and the rest are determined to follow the lead set them. So many caribou have been slaughtered on the barrens and tundras of the Arctic regions, both east and west of the mountains, that in certain districts their numbers have been greatly reduced, and in some the animals have disappeared altogether. In Alaska not many years ago caribou were plentiful down to the shores of Bering Sea, but now one must travel in many places something like a hundred miles inland before finding them in any number. On the Kenai Peninsula and surrounding districts head hunters, both white and red, have nearly exterminated the species, and the increased means of transportation to and through their country, the large number of hunters, added greatly to annually, and the improved firearms, would seem to foretell the extinction in a brief period of this fine animal in the regions where he is accessible.

Caribou, like all deer, shed their horns every year, the time when this takes place varying apparently slightly according to locality; but between the beginning of December and the middle of January, with possibly very few exceptions, all horns of bulls have been dropped, the exceptions being some young bulls, that carry their horns until spring. The old bulls shed first and then the young males, the females often retaining

theirs until their young are born. While very much smaller than those of the males, the female antlers are a very efficient means of defence, for, being composed of short beams armed with sharp spikes, they form a very dangerous weapon when wielded by an enraged animal as powerful as a caribou in her own defence or that of her young. During growth they are covered with a furry, velvety skin, which is full of blood-vessels, tender and very sensitive, and which bleeds profusely if lacerated. The beam has various degrees of curvature, and the tines are of all shapes and sizes and modes of palmation.

The members of the two great divisions, the Woodland and Barren-Ground, resemble each other closely in their habits, varying only as the different configuration of their districts causes them to adopt a slightly changed mode of life. In essential particulars they exhibit but few variations from each other, the larger number of which have been mentioned and some considerably enlarged upon, and there are not many distinct characters possessed by either. Still, in parlance of the day, these dwellers of the woods and plains represent different *species*, how many is a matter that cannot be said to be as yet satisfactorily determined. East of the mountains, on the cheerless plains of Arctic America and in the great island of Greenland, two species are recognized,

KENAI PENINSULA

Rangifer stonei, A. J. Stone's Caribou

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KENAI PENINSULA

Found on Kenai Peninsula, Alaska,
by H. E. Lee

Rangifer arcticus and *Rangifer grœnlandicus.* These races are lighter in color than the Woodland caribou and rarely assume the dark-blue coat worn by the latter in the autumn before the white of winter appears. But this question of color cannot be accepted in any way as a main factor for determining the specific or even racial value of these animals, for it not infrequently happens that those caribou that have been killed in the same locality and at the same season present in their different coats all shades from an almost soiled white to a mouse color. As a rule, I think it may be said that the Woodland animal is usually darker than his relative of the plains, but it would be difficult to distinguish one Woodland caribou from another, taken at the same season, by color alone, no matter from what part of North America they come. The two animals above mentioned are smaller than the Woodland caribou, and it is much easier to distinguish these from their southern relatives than it is to find characters to separate them from each other. Both of the Arctic forms have slender antlers with few points, and there does not seem to be much difference in the color of their coats; and while these animals from the different localities have been recognized as distinct for a long period, yet it can hardly be said that any character has been described by which the deer of the mainland

could definitely be distinguished from those of Greenland. The figures here given of the two forms show how the antlers vary both between individuals of the same species and of the two species themselves, and the one is no greater than the other. It is not improbable they cross from the island to the mainland on the ice, and *vice versa*, and a Greenland animal shot among a herd of the Barren-Ground deer would probably never exhibit any signs of his nativity nor be considered as differing from the caribou among which he was killed; and the same may be said of a mainland deer procured in Greenland. Island forms that have become separated and have no access to a continent as a rule will in time develop characters that distinguish them from their mainland ancestors; but when communication has not been entirely cut off, the question naturally arises as to whether or not a mingling of the two forms has not been continued, even though at irregular intervals, and a production of a distinct variety been delayed if not prevented. In the present case more material is needed of both species before any definite opinion can be formed. At present they are difficult to distinguish from each other by any of the characters thus far produced.

It may be well here, before proceeding to the Woodland caribou, to consider for a moment the

reindeer of Scandinavia, which is the typical form of these animals and characterized by Linnæus as *Rangifer tarandus.* It is nearest allied to the Barren-Ground caribou of all the forms found on the North American continent, but is a larger, stouter animal and will weigh from two hundred and fifty to three hundred and twenty pounds. In the style of the antlers there is a great resemblance to those of the Barren-Ground caribou, but they are heavier. It extends its range into Russia, but in certain parts of Asia it appears to be replaced by a larger form that in Siberia approaches in size and appearance our Woodland caribou.

The reindeer is regarded as distinct from the North American forms and stands as the type of the genus. In the island of Spitzbergen there is yet another form of reindeer that seems to have more claims to be regarded as a distinct species than have the great majority of its kindred. While the antlers approximate the Scandinavian type, they are smaller and with a shorter beam. But the chief characteristic is the shape of the nasal bones, which are expanded at both extremities and greatly constricted in the middle, and there is also a difference in the superior border, thus varying greatly in shape from the nasals of the Scandinavian deer, which increase regularly in width from the anterior end to the maximum diameter of the lachrymal vacuities.

Farther south we reach the Woodland caribou, represented east of the Rocky Mountains by also two forms, known as *R. caribou* and *R. terræ novæ*, the latter's claim for separation resting chiefly upon the greater size of the body and antlers, more particularly the latter. All deer vary so greatly in size, even among individuals of the same species, that it would be advisable to have data gathered from a large number of individuals before it could be determined that the size of either closely allied species was the greater, and that has not yet been produced to prove that the Newfoundland deer is larger than that of the continent. The antlers on the average appear heavier than those seen on the mainland, yet in many ways they closely resemble each other, and antlers are not infrequently obtained from eastern North America as heavy and wide-spread, and provided with as many points, as those procured in Newfoundland; and it is doubtful if any one could accurately state to which form they should be attributed. The final status of these animals can only be determined by the acquisition of ample material of both forms, which up to this time has not yet been obtained. The large antlers of the Newfoundland caribou here figured belong to the type specimen, and are of a rather unusual size.

No other species are to be met with until the Rocky Mountains are passed, and then three

GREENLAND

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have been described, *R. montanus* from British Columbia, *R. stonei* from the Kenai Peninsula, Alaska, and *R. dawsoni* from the Queen Charlotte Islands. Taking the last-named first, it has been pretty conclusively proved by Mr. Osgood that no caribou are found on the Queen Charlotte Islands, and none have ever been known to live there in the memory of man. Its habitat must therefore have been given erroneously, and the specimen came undoubtedly from the mainland and is not specifically distinct from *R. montanus*. *R. stonei*, from the Kenai Peninsula possesses no characters not found in *R. montanus*, and cannot be separated from it.[1] This reduces the western forms to one only, *R. montanus*, claimed to be specifically separable from the *R. caribou* of the East, the chief points of difference being its large size; but the measurements given — 46½ inches at the withers, and 95 inches

[1] The question of species among caribou is one under very active discussion, and there appear to be no sufficient data at hand to warrant definite conclusions. Mr. A. J. Stone, who has had more practical experience in the field among caribou than any of the present students of the animal, has recently (March, 1902) returned from Alaska and British Columbia, bringing specimens which tend to show a new mountain specimen from that Mr. Thompson Seton described as the *R. montanus*. Mr. Stone also brought out half a dozen specimens each of what he claims to be entirely new species and that have been named respectively *R. granti* and *R. osborni*. In each case he has secured enough specimens of each to show a consistent adherence to type. To be sure, all these are mere variations, — in most cases but slight, — yet they appear to be distinct. The full story of the caribou may not be written for a year or so yet. — EDITOR.

from tip of nose to root of tail — do not exceed and in some instances may not equal the dimensions of Woodland caribou from the East. The describer, Mr. Thompson Seton, states that the "antlers are not noticeably different from those of the Woodland species, but in general are distinguished by their great number of points."

It will be noticed that the differences from other forms claimed for this one are of the slightest value, and it would seem that it will be necessary to find more important ones before it can be satisfactorily established as a species distinct from the eastern animal. When we consider the endless variation that exists among caribou, both in color and in the shape and size of the antlers, even among animals belonging in the same herd, the difficulty of finding a recognizable permanent character to separate those of one district from those of another becomes apparent; and it cannot be said that this has yet been successfully accomplished, at least as regards the animals belonging to the two divisions, Woodland and Barren-Ground. Between the deer of the Arctic regions, including Greenland and those of the forest lands to the south, distinctions appear recognizable in the lighter beam and fewer points of the antlers, and possibly in the smaller size of the northern animal, which is claimed to be very noticeable; indeed, Richardson states that he has

ALASKA

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"seen a Canadian voyageur throw a full-grown doe on his shoulder and carry it as an English butcher would a sheep," and that the bucks weigh, "when in good condition, from ninety to one hundred and thirty pounds," and the average weight of ninety-four deer shot by Capt. M'Clintock's men in the Arctic regions, after they had been cleaned and dressed for the table, was only sixty pounds. This statement and the weight given certainly describe a very small deer, which, if of average size, would alone indicate an animal different from the Woodland species. As to the other forms, the Greenland as distinct from the Barren-Ground species, the Newfoundland, the eastern mainland animal, and the one from the western portion of the continent, as separable from each other, our material at present is not sufficient for a definite decision to be reached, for much has yet to be learned regarding the variations of these animals, both seasonal and individual. As far as one is able to judge by the knowledge we have at present, it does not seem probable that any more tenable species than the three Woodland and two Barren-Ground of this paper will be recognized, with the possibility of one or more of these being reduced to a race or the synoptical list; for most of the work done with these animals has been based upon very insufficient material and scant knowledge.

THE MOOSE, WHERE IT LIVES AND HOW IT LIVES

By Andrew J. Stone

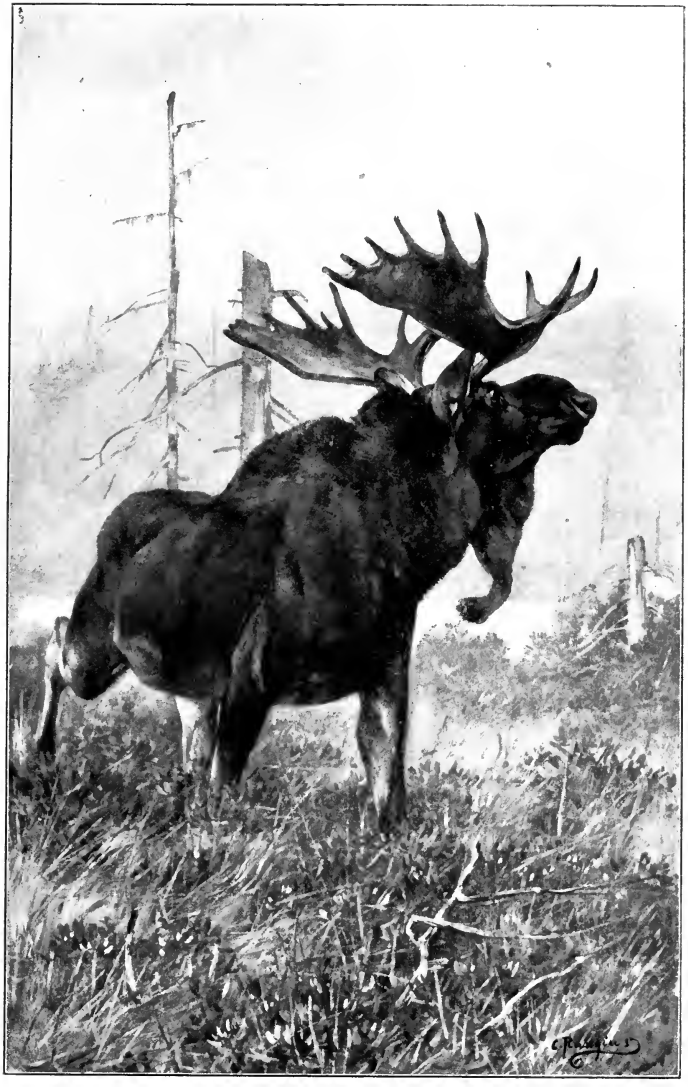
THE MOOSE: WHERE IT LIVES AND HOW IT LIVES

The moose is distinctly the most individual character among the deer family. It is the giant of the *cervidæ*. It is the hardiest and the most capable of self-protection. It will be the last of the deer family to become extinct in America, unless perhaps with the single exception of the whitetail deer in the rugged wilds of southeastern Alaska, and in a few favorable localities in the states where well protected. It roams more of the forest country of America than any other species of the deer family. The greatest and wildest wilderness in the world is its home. Nearly all of the forest country of the whole of North America north of the United States, and a part of some of our northern tier of states, is occupied by it, and the term "forest country" is here meant to apply to all the country upon which timber grows — even though ever so sparse and dwarfed. It is the most cunning of all the large animals of North America, and the most capable of eluding its pursuers.

Stories of its wonderful size, of its magnificent spreading antlers, of its capabilities of detecting and escaping enemies, of its wonderful strides in running, and of its mysterious and noiseless movements, have long been favorites around the campfire, at the club, and around the home fireside. The man who has acquired so thorough a knowledge of the habits of the moose as to enable him, unaided, to seek the animal in its native haunts and by fair stalking bring it to bay, has reached the maximum standard of the American big-game hunter.

Species and Characteristics. — There are in America two known species; the *Alces americanus* of Maine and Lower Canada and *Alces gigas* of the Kenai Peninsula, Alaska. The immense expanse of country between these widely separated localities is inhabited by the moose, and whether the two species blend in this intervening country, gradually losing their individuality or specific character, or whether the boundaries of the range of each are clearly defined, or whether there is yet another species in the great country between the two localities from which these types have been described, is a matter yet to be determined.

When we consider the many surprises the North has furnished us within the last few years in the way of new forms in large mammals, we



MOOSE

need not be surprised if the great moose range on the head waters of the Liard, Peace, Stickine, and Yukon should give us the third variety. The animals of that country are very large, are darker than the moose of Maine and Lower Canada — even darker than those of the Kenai, yet their antlers are not nearly so massive as those grown on the Kenai Peninsula. These two facts were obtained by personal observation, but I never secured specimens sufficiently perfect to permit the establishing of their identity. There is a large area of country farther north in which I am convinced the moose differ in character from those in any part of the country just mentioned; and one may readily infer there is yet much to learn about the moose.

Just how the moose from different sections of their ranges may vary in size is yet a matter largely of opinion. A more complete compilation of carefully made measurements from a series of adults from widely separated ranges will be necessary to determine this, as well as other points of great interest concerning this animal.

The moose of the Kenai Peninsula are reputed by many to be the largest in America, and from such measurements as it is possible for me to secure I might accept that conclusion. But there are so many magnificent ranges from which we

have no data, that we must await definite knowledge. In the Cassiar Mountains and on the Upper Liard River in northwest British Columbia, and again in the country around the head waters of the McMillan, Stewart, and Peel rivers, Northwest Territory, are the two ideal moose ranges of America. From neither have we a single specimen to give us positive knowledge of the character of the local moose. Nor has sufficient knowledge been obtained to warrant a description.

To the north of the Porcupine and around the head waters of the Colville rivers in Alaska is yet another large moose range from which we have no real facts to rely upon. We have in museum collections a few specimens from southern Canada and Maine and again from the Kenai Peninsula in western Alaska, and these persuade us that the animals of the Kenai are not only larger than those in Canada and Maine, but they grow a much larger head of antlers. The table of measurements on the opposite page clearly shows the comparative size of adult males.

There is no other wild animal in America that grows so rapidly as the moose. The calves are small when very young, but they grow with almost startling rapidity. A calf secured by me on the Liard River, in the latter part of May, and not more than one week old, measured: length,

37 inches, tail, 1½ inches, femur to humerus, 20½ inches, across chest, 4½ inches, height at shoulders, 33 inches, depth of body, 9½ inches, height at elbow, 21 inches. One secured by me on the Kenai Peninsula, October 30, evidently just about five months old, measured: length, 88 inches, tail,

	Length.	Tail.	Tarsus.	Femur to Humerus.	Across the Chest.	Height at Shoulders.	Height at Elbow.	Depth of Body.
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
Three-year-old female, Liard River	93	4	29	53	14	68	38	29
Three-year-old male, Mackenzie River . . .	99½	4	31½	55	13½	66	41	25
Adult male, Kenai Peninsula	106	5	33½	57½	17	77½	42	35½
Adult male, Kenai Peninsula	103½	5	33½	58	15½	76½	41	25½
Adult male, Kenai Peninsula	108	5	33	54	16	77	40	37
Adult male, Maine	98			48		69		32

4 inches, femur to humerus, 54 inches, across chest, 11 inches, height at shoulders, 67½ inches, height at elbow, 40 inches. It had grown in five months 41 inches in length, 34½ inches in height, 6½ inches in width of chest, and 19 inches in length of foreleg below the elbow. A carefully estimated weight of the five-months-old calf as it stood alive was fully 600 pounds; the one a week old about 65 pounds. Comparative measurements prove, however, that the first season experiences the most rapid growth. Comparing these

measurements of the calves with that of the three-year-old bull and again with the adults, it is plain the animal does not grow so fast after it leaves its mother, and that the rapidity of growth is decreased as it nears maturity. This would vary with different animals, and there are individual animals which attain a size perhaps much greater than that of their neighbors, but my experience teaches me that adult animals of any given species are very uniform in size, much more than they really look to be. The tape line in the hands of one who knows how to use it reduces the size of what seems to be an especially large individual to a place very near that of its relatives. The above table shows how very uniform are the three adult males from the Kenai Peninsula. It is the result I have also found in many other species. The general contour of the surface anatomy of animals varies so exceedingly as to influence their appearance and often greatly deceive one concerning the animal's real size. I have looked at animals and remarked before measuring that they were very large or very small, only to find their actual size, when the tape line was applied, to vary very slightly from the uniform size of adults of the species. One who did not understand measuring animals might have made any of the above adult moose twelve inches taller, and have really thought he was making an honest measure-

ment; but a large bull moose is a heavy animal, and does not stand on stretched legs or on the tips of his long toes; so, too, the top of his shoulders is at the surface of the skin and not at the end of his long mane.

I have collected many interesting statistics during my travels through the great country of the moose, bearing upon their size, weight, measurements of hoofs, joints, and many parts of the animal's anatomy. The weight of the four quarters of adult moose as they are sledded in to the Hudson's Bay Company posts in winter, when they are generally poor, ranges from 350 to 500 pounds. This would refer to females as well as to males. I have taken from adult males very poor hams which weighed as high as 110 pounds, and I know of a fat bull killed near Fort Norman on the Mackenzie whose four quarters weighed 700 pounds.

When on the Liard River in the winter of 1897–1898, an Indian brought in a skin from a bull moose, just as he would take it, minus the skin from head and legs. It weighed 90½ pounds, after fleshing, 72 pounds, after hair was removed, 51½ pounds, made into rawhide, 9½ pounds, into dressed skin, 5½ pounds. This was not a large pelt. Many of the hides complete as the naturalists will take them, weigh, when green, close to 150 pounds.

From careful observation, I believe the moose to reach maturity at about six years of age. To just what age it may live must be conjecture, but approximately I would judge from what I have been able to learn that the maximum period is not far from twenty years. Old animals are easily distinguished by their worn and broken teeth, and by the gray hairs around the nose and at the edge of the hoofs.

The color of the moose changes from an ashy brown to almost black, varying among animals of different ages and with the seasons of the year, and with different localities. The moose of Maine and Lower Canada are much lighter in the color of the body than those farther to the north and west, and their legs are almost white, while those on the Liard River and the Kenai Peninsula have quite dark hair on their legs. The hair is very coarse, and in the winter is very thick and long, while for additional warmth is grown a light coating of soft wool-like hair or fur of a medium shade of brown. I made what I consider a rather remarkable discovery in specimens killed by me on the Kenai Peninsula. Between the toes of these animals grew a bunch of hair of a perfect emerald green.

The young calves are of a light red with dark dorsal stripe. With the coming of the fall their coats grow darker and the dorsal stripe loses its

Spread, 67 inches

Spread, 72 inches

MOOSE ANTLERS FROM ALASKA

prominence through the sides shading up to it. The moose of the Kenai has only very recently been described by Mr. Gerrit S. Miller, Jr., of the Biological Survey at Washington as *Alces gigas*. He classifies it as being a larger and more richly colored animal than the eastern moose. In his description of "A new moose from Alaska," he says: "The moose of Alaska has long been known to be the largest of the American deer, but hitherto it has not been directly compared with true *Alces americanus*." The color of the *Alces gigas* is not so dark or rich as that of the Liard River moose, and when we obtain specimens from other parts of the North, from the centre of such great ranges as that of the Liard or Koyukuk rivers, we will likely find animals fully as large as those of the Kenai Peninsula, but not wearing such large antlers.

I am thoroughly of the belief that the North will produce a third variety of moose (and fourth is not impossible); but only a careful and intelligent study of these animals by one trained to the work, with complete series of specimens and full measurements and data, from the ranges mentioned, can determine sufficiently their relative character, size, and habits; and ultimately decide the question of species.

More is known of the antlers of the moose

than of all the rest of its anatomy. It is not that they are really the most important feature of the animal, but because few entire specimens have ever been taken by naturalists; and the interest of the average sportsman centres in the head of antlers. I have seen a great many heads from Lower Canada and Maine, the Liard, the Mackenzie, and the Yukon rivers, and the Kenai Peninsula, and there is no question that the antlers grown by the moose of the Kenai are not only very much the largest in America but of distinctive character. The spread is greater, the palmation wider, and the general contour very different from those observed from any other locality.

Nine heads secured on the Kenai, fall of 1900, ranged in spread from fifty-six to seventy-four inches. The average spread of the nine heads was slightly above sixty-five inches. A head from Maine or Lower Canada above sixty inches in spread is rare, and what might be considered ten good heads would probably average in width but slightly over fifty inches. The antlers lose the velvet the last of August and the first of September. Adult males shed their antlers the latter part of December, but young males usually carry theirs from thirty to sixty days later, and I have heard of instances where they were retained until the first of April, but such cases must be very rare.

The dewlap or bell worn by the bull moose is always very narrow in the young animals, but often quite long. I have seen them almost a foot in length. As the animal grows older the dewlap grows shorter and wider, extending farther along the throat, until in old animals it becomes a long but very shallow pouch.

Range. — The range of the moose in America extends as far east as New Brunswick and as far west as the limits of tree growth on the Alaskan Peninsula, south into Montana and Idaho,[1] and north to within a few miles of the Arctic coast or to the limits of tree growth. Only a small per cent of all this vast territory is entirely lacking in moose, though they are very unevenly distributed.

They do not inhabit that large tract of land known as the Barren Grounds, which lies between the Mackenzie River and Hudson Bay; and the strip of country extending to Lake Superior east of south of the Barrens is almost or completely lacking in moose, although the greater part of it would seem well adapted to their requirements.

The moose is not a migratory animal, but frequently surrenders territory on account of the encroachments of civilization, and perhaps at times from other causes; but what might seem surprising to even the well-informed upon the

[1] A very few are said to still range in the Wind River Mountains, Wyoming, where once they were fairly plentiful. — EDITOR.

subject is that they have, during the past fifty years, acquired a large amount of territory in the North. I believe they have acquired within our present history of them almost or quite as much territory as they have lost, and that their range is almost or quite as large at the present day as it ever has been. They are now numerous in a very large territory in northwest British Columbia, through the Cassiar Mountains, on Level Mountain, and throughout the head waters of the Stickine River, where thirty years ago they were unknown. They are now abundant on the Kenai Peninsula, Alaska, and in other sections of the North where at one time they did not exist. Acquisition of territory by so wary an animal as the moose can only be accounted for in one way. Many years ago the Indian tribes occupying these sections were very numerous and inimical to moose life, but, since the Indians have dwindled from thousands to insignificant numbers, the moose finds comparatively unmolested life. This I know to be the case on the Kenai and in the country referred to in northwest British Columbia; and there are many similar changes in conditions in other parts of the North, notably in the Nahanna River country, north of the Liard, where the entire tribe of Indians that once hunted the country have died out, to the very great increase of moose.

MOOSE ANTLERS FROM ALASKA

Moose are now extinct in all the eastern states except in Maine, where they are more plentiful and more hunted than in any other section in America. That they continue plentiful is due to the excellent game laws and the fact that there is no avenue of escape. In Canada the situation is different; the moose have been driven back north, into an unlimited country of retreat. In Washington, Idaho, Montana, and in some parts of southern Canada moose are almost extinct. They are found to some extent in all parts of the Mackenzie and Yukon river basins; and they are most abundant in the countries of the two Nahanna rivers which empty into the Liard and Mackenzie respectively; in the country of the Gravel River, a tributary of the Mackenzie; in the head waters of the Stickine and Liard rivers; in the region of the Teslin Lake and north, just west of the Rockies to the head waters of Peel River; on the Upper Koyukuk north of the Yukon; on the Tananna south of the Yukon; on the Kenai Peninsula; around the head of Cook Inlet; and they are also plentiful in most of the timbered regions west of Hudson Bay.

They do not approach the Pacific coast in Washington, British Columbia, or in southern or southeastern Alaska, but on the Kenai and Alaskan peninsulas they range down to salt water.

The Mackenzie Delta was at one time a favor-

ite range of the moose, but there they have been fearfully reduced in numbers. The Indians claim that several years of great spring freshets, which overflowed the islands at the season of the year when the calves are very young, causing death in the cold flood, was responsible for the great reduction in moose. Knowing the delta I believe their theory correct. One Indian told me that for several years after the floods had subsided, he hunted the delta and killed many cow moose, but they were always without calves. I sledded the length of the delta three times and boated it once through its entire length, and saw signs of not more than five or six moose in the six hundred miles of travel.

Habits. — The habits of the moose vary with the different sections of the country in which they range. Animals, like people, to some extent must conform to their surroundings. The habits of the moose in the far North and West differ from those of southern Canada and Maine in many ways. In the North and West they do not yard up in winter, and consequently do not live much on the bark of trees in that season, they do not feed to any extent on lily pads; do not run so much in the timber; and in some sections they range much higher in the mountains. Bulls do not, in response to the hunter's birch-bark-horn call, in imitation of the cow, come down

to the camp to be killed, like their cousins in Lower Canada and Maine.

Moose yard not from preference but from necessity. Their favorite winter range is in sparsely timbered countries, in the hills abounding in willows and alders. In Lower Canada and in Maine the snowfall is often very deep, and when the winds drive it drifting into the open or partially timbered ridges, piling it deep among the willows where these animals like to feed, they seek timber where the snow, unaffected by the wind, remains at uniform level. Experience has taught them where to find food at such times, and they hunt the poplar or aspen groves and remain there indefinitely, living upon the bark they gnaw from the trees. Contrary to general impression, the snow does not pile up so deeply in the North, and consequently the animals remain in their favorite feeding-grounds in the hills until the snow, either from the winds or the warmth of a coming spring sun, takes on a crust which will bear the wolf — the only enemy of moose beside man. When the snow is soft the wolf never troubles the moose, for well it knows this big deer is more than a match under such conditions; but when the wolf can run on top of the snow, the moose is at his mercy; a band of them will bring down the most powerful bull. Unlike the caribou the moose is a heavy animal with small feet

in proportion to its size, and they can never run on top of the snow. The wolves thoroughly understand this, and a band will systematically plan an attack and execute their plans with deliberation. Surrounding the moose, some will attract its attention by jumping at its head, while others cut its hamstrings. To escape this danger northern moose leave the hills in March and April and go down into the timber of the lowland where the snow is yet soft. The wolf does not destroy a very large number of moose, but when driven to extreme hunger will devise many kinds of methods for their capture, and, strange to say, will attack the largest bull as readily as the smaller cow. I account for this by the fact that as cows, calves, and young animals, with sometimes an adult bull, all run together, their combined resistance is too much for the wolf, whereas some of the old bulls are frequently found alone. On the Liard River, in the winter of 1897–1898, the wolves killed and ate a very large bull within one mile of the little fur trading post at which I lived. The snow at that time was soft in the hills, but crusted on the river where the winds swept up and down. Realizing they could not capture the bull in the hills, they drove him on to the river. The river was wide, and as he went plunging through the crust into the deep snow beneath, they overtook and slaughtered him

with ease. The moose knew his situation perfectly. There were wolves to his right, left, and rear, but he simply miscalculated his ability to gain the opposite side of the river. Knowing the cunning of these animals, I believe his object in crossing the river was to reach some locality he knew, and where he would have a greater advantage over his enemies than in the country where they first disturbed him. Perhaps the snow was not of sufficient depth in the section he was leaving to give him the advantage he wanted, and he knew a locality in which it was. Animals are much better reasoners than generally supposed, and the moose is one of the deepest of the animal kingdom.

During the summer and autumn the moose of Lower Canada and Maine feed extensively on pond-lilies and other succulent plants which grow in the marshy lakes and around the water's edge, and it is not uncommon for them to shove their heads completely under water in search of this kind of food.[1] This character of plant life is much less common in the farther North, and the moose do not seem to feed upon it where it does occur. I saw pond-lilies growing in the Dease

[1] The moose does on occasion, when feeding in a lake or pond, go completely under the water and out of sight after an especially succulent lily root. This is disputed by some, but it is a fact, none the less. — EDITOR.

Lake country, in the Liard River country, about 60° N., to the west of the Mackenzie 66.30° N., in the country north of the Porcupine 70° N., and on the Kenai Peninsula 60° N. Moose abound in all the localities mentioned, yet although I searched carefully for it, I could find no trace of their feeding on the lilies. Certain varieties of willows are their favorite food, though they feed upon alder, aspen, and sometimes birch and balsam. They snap off branches, thick as one's finger, as readily as most ruminants nip blades of grass, and will ride down a young tree to secure its tender top branches. Lowlands along the streams and around the marshy lakes are their favorite feeding-grounds in spring and summer, but with the approach of fall they begin to work their way into the hills. High rolling country which has been run over by fire, and followed by one or two seasons' growth of willows, is their very choicest feeding-ground. The new growth of willows after a fire is always exceptionally luxuriant; the new shoots being large and tender. The short neck of the moose unfits it for feeding on the ground, and rarely are the willows clipped below a height of thirty inches. Their long heads and great height naturally fit them for such feeding, but they seem to delight in doing so, and will often rear on their hind legs to secure some especially tempting twig. I have seen where

they have clipped branches fully ten feet above the ground.

It is during the mating season, September and October, that bull moose become most courageous and reckless. They are ready for battle, and they do battle in royal manner among themselves for the possession of the cow.

While on the Kenai, in the fall of 1900, I heard three combats in progress during my hunt on the peninsula. The thumping of their antlers can often be heard for a mile, and to the ear of the trained hunter the sounds are unmistakable. I had left camp but a couple of miles behind one morning when I heard the clashing of antlers. I hurried in the direction of battle as rapidly as possible, but was greatly retarded in my progress by fallen timber and tangled brush, and although the affray must have kept up fully thirty minutes, I failed to reach the scene in time for the finish. I found the place where it had occurred, an open spot about fifty feet across, surrounded by an enormous growth of alders on all sides. It was just such a secluded spot as men might select for duel. The earth was fearfully dug up by the hoofs of the moose and the surrounding alders broken down in many places, while great locks of long brownish gray hair bestrewed the ground. Both animals had disappeared, and although I was very near when the battle ended, I heard no cry

of defeat; the unfortunate, like the brave spirit he must have been, suffered his mental and physical pains in silence.

Like all the deer family at this season of the year, they are very curious as well as very reckless, and frequently pay for it with their life. Although retaining a certain amount of fear of man, yet their proud spirit so dislikes to acknowledge it at such a time that they will often stop in plain view of him to exchange glances at short range.

So great, too, is the bull's curiosity at this season that he will seek out any unusual noise. Just here I want to correct a very general impression that the bull moose can be called by the use of the birch-bark horn, in the belief that he is approaching a female.[1] No bull was ever half so stupid; such a thing is entirely unreasonable. He is simply attracted by the unusual sound, and, being exceedingly curious, endeavors to locate the meaning of this strange thing in his home. The pounding on a tree with a club by the Tahltan or Kaska Indians in northwest British Columbia (among the best moose hunters in America) or pounding the willows with a dry shoulder blade of the animal, by the Liard River Indians, will

[1] Mr. Stone's opinion on this subject differs from that of experienced hunters. There is convincing evidence that the bull is deceived into believing the horn call to be the call of the cow. — EDITOR.

serve exactly the same purpose; or almost any other unusual noise would bring the bull within the sound just as readily.[1] There is no animal in the world whose sense of hearing is more acute, and no hunter with any knowledge of the moose will call it stupid; yet hunters tell how their guide brought up a bull by imitating the call of a cow. How many of these hunters ever heard the call of a cow moose to give them authority to decide how perfectly the birch-bark horn in the hands of their guide imitated the cow's call.[1]

The moose inherits faculties for reasoning the few simple things that ordinarily come to his life, and along with many other animals is capable of detecting the slightest variation in sound. Not only do animals recognize the cry of their own kind, but the cry of an individual. To know animals requires something more than careless observation. One must study them long and earnestly, and when we do this we can find reasons for everything they do. I want no better comparison than I can find in the seals. On the Pribilof Islands, during the seal breeding season, one hundred thousand puppies are congregated at one time and left by their mothers who go to sea in search of food, often being gone two and

[1] This totally disagrees with abundant evidence to the contrary. — EDITOR.

[2] The cow's call is quite familiar to those who have had much calling experience in the Maine woods. — EDITOR.

three days. The little fellows get very hungry during this absence and set up a constant cry. When a mother lands she goes about among the thousands hunting her own; thousands of little voices are constantly coming to her ears — to man they all sound alike, but the seal mother detects her own from nine hundred and ninety-nine thousand other voices; yet some would have us believe that the bull moose is so stupid as not to know the difference between the call of his mate and the call of a birch-bark horn. I could make innumerable comparisons along this same line, but am willing to allow the readers to draw their own conclusions. I simply assert that when a moose approaches such a horn he does so as he would almost any other strange noise, and he knows that he is not approaching a mate. Under the excitement of the moment he may do foolish things, but he is not a fool.

The long legs of the moose enable them to travel with ease through miry swamps, deep snow, and among fallen timber. They do not drag their feet through the snow, breaking trail as they go, like cattle, but lift their feet above its surface every step, even though it may reach a depth of twenty-four to thirty inches. Several animals will walk one behind the other, stepping in the same tracks with such care as to leave the impression of but one animal having passed. They can step

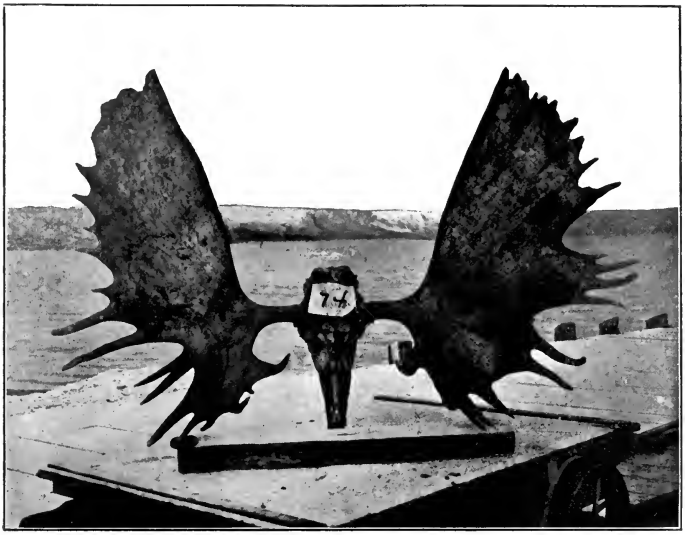
over logs of surprising height. I have seen the snow piled upon logs to the height of three feet above the ground, yet undisturbed by them in stepping over. They trot or run with a long, swinging stride, and rarely leap, and then never more than one or two jumps when suddenly frightened. They travel with great rapidity and ease; they can run through thick timber and brush, scarcely creating a sound. Often the inexperienced hunter is very sure he has his moose in a certain thicket or brush, only to find, after a very careful approach, its bed in the leaves yet warm, and the animal perhaps two miles away. So acute is their sense of smell and hearing, and so careful, silent, and mysterious their movements, that they not only detect the enemy under circumstances that would seem impossible, but they escape him without giving the slightest notice of departure, running through all sorts of tangles without so much as snapping a twig. If the moose is suddenly alarmed and recognizes itself observed by an enemy, it does not endeavor to conceal its movements. If in the brush or timber, it will make a bound and go crashing through, smashing everything on its road in the most wild and reckless manner; if in the open, it will give you one quick glance and move off in a long, swinging, and usually rapid trot, but never at its best speed so long as in sight, for the moose is

proud and dislikes the idea of expressing fear. Watch it carefully, just as it rounds the hill and realizes it is about passing out of your sight, it will suddenly stop and give you one very short look and then away with all the speed it possesses. Though proud, the moose is full of fear, and feeling now it is out of your sight, loses no time in leaving you far behind.

The moose cannot be considered cowardly or timid, yet the instances are very rare where it has been known to attack man. Although a large and powerful animal it fears man, and always avoids contact if possible. If cornered or seriously wounded, it will sometimes show fight, — most animals will do this, — but the hunter has been injured much oftener by the common Virginia deer than by the moose. Near Fort Norman on the Mackenzie, a few years ago, a wounded bull charged and killed an Indian hunter who in his effort to escape was held by his clothing catching on a snag. Had the bull missed him in his first charge he would not have renewed it; few wild animals will return to a charge, failing in the first.[1]

I stopped three days at a trading post on the Upper Liard River in the fall of 1897. The trader

[1] The sladang of the Malay Peninsula is about the only one which, having missed on his first charge, will almost invariably return to the attack; but several species, notably the African buffalo, the grizzly bear, the tiger, and the black leopard, may usually be depended on to return to the attack. — EDITOR.



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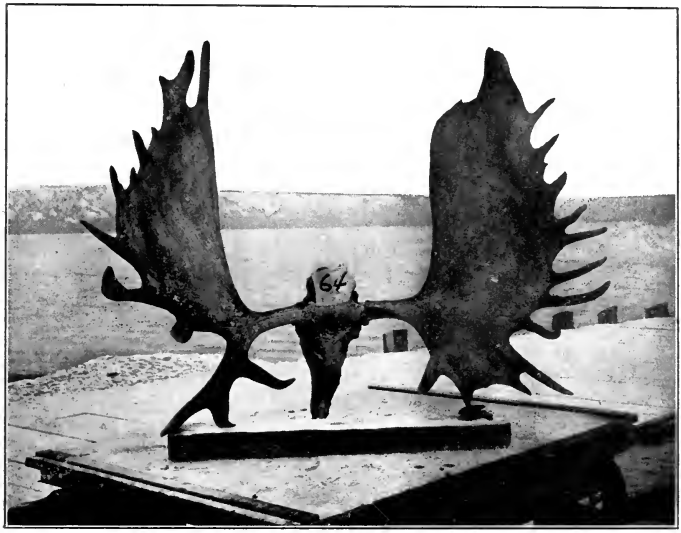

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MOOSE ANTLERS FROM ALASKA

told me that he had a pet moose calf from the spring before. It was running loose in the forest, and he told me it would often be gone for three days at a time. It was not at home when I reached the post, and he was very anxious for it to come that I might see it. The second day at noon, while we were eating dinner in the cabin, the door standing wide open, we heard the jingle of a bell, and the trader said, "There comes Jennie." Sure enough she came as fast as her legs could bring her (and she was not riding a bad set of legs). She ran right in at the door, for she was accustomed to coming into the cabin. The moment she saw me, however, she looked at me very hard, her eyes grew larger, she sniffed the air, and she backed quietly out of the door. She objected to strangers. She would play with the trader, but would not let me get near her. I had a splendid opportunity of studying the movements of this animal, the way it carried its feet, legs, and head, and many of its manœuvres, all of which were extremely interesting. Often when desiring to play it would stand on its hind legs and strike at its owner with its fore feet in a very reckless and vicious manner.

The young of the moose are dropped the latter part of May. The first calving rarely ever produces more than one, but adult females very frequently bring forth two, and I have heard of

triplets. I left the Liard River the 21st of May for the Nahanna Mountains, following up a small stream. On my way into the mountains I saw a great many tracks of moose, which my Indians assured me were those of females, but I did not see the track of a single calf. I was not hunting for moose, but was travelling through a splendid moose country, and was given the opportunity of making some important observations. On May 26 I killed a cow and a calf; the calf could scarcely have been a week old.

I returned to the Liard by the same route I had gone on May 30, and young calf tracks were numerous in the sands along the stream, and from numerous observations I have made I believe the majority of the calves are dropped between May 20 and June 20. I have, however, discovered frequent irregularities in the breeding of many varieties of wild animals, and such irregularities, though not common, are found among the moose. While on the Kenai Peninsula in November, 1900, I ran across a young cow with a calf not more than eight weeks old. I spent ten days in trying to secure the pair, but failed, owing to the difficulty of travel in the deep snow, but we ran across their tracks every day during this time, and I saw them on several occasions. A calf always remains with the mother during its first winter, and sometimes longer. It

is a very common sight to see a mother with her year-old and baby moose together. But when a mother is preparing for a new offspring she endeavors to forsake the company of her one-year-old, and she is usually successful. She will resort to methods that indicate her cunning and reasoning power. She will wander about in a valley near some stream, and while her yearling is lying down she will feed off alone to the stream and swim across, then run rapidly down the other side around a bend out of sight, and again taking to the stream may swim down it for a mile or so and out again, keeping up this game until she is confident of having lost the yearling completely. After this, another move which is a very common one is to swim to some island in the stream, which she will travel all over for the purpose of ascertaining if it is free from enemies. If she finds it to be, she will remain there until her calf is about two weeks old, when she will start with it to the mainland. The little fellow will have no difficulty in keeping afloat, but the rapid current nearly everywhere in the northern rivers would carry it down stream if left alone, and the fond mother understands this, and with the affection that a moose mother knows she gets below it, so that the calf swimming and resting against the mother's side is steered in safety to the mainland.

Moose are great swimmers and think nothing of crossing lakes and streams miles in width. Notwithstanding the strong tides of Kachemak Bay, Cook Inlet, a young bull, only two or three years ago, swam from a point near Yukon Island across Kachemak Bay to Homer Spit, a distance of over eight miles. I have travelled the same course in a light-boat, with good oarsmen, going with the tide, and we were over two hours rowing it. Just how long the moose was in swimming it I did not learn, but I was assured by a man — entirely responsible — who was living on Homer Spit, and who saw the feat, that the animal was not at all exhausted when he landed.

Possibilities of Extinction. — The moose will not soon become extinct. The advent of the prospector in Alaska, thousands of men scattered through its range armed with the best of rifles, is creating awful havoc in its numbers, and very especially is this the case in the region of the Klondyke and Stewart rivers. Sportsmen and professional hunters are combining to make its existence on the Kenai Peninsula intolerable. And in almost all parts of the North the sleuth-like Indian is on its trail, equipped with modern rifle and plenty of ammunition. The moose is having a very different time from what it had a few years ago, but its wits, always alert, are being further trained, and its wonderful sense of

smell and hearing help out of many a scrape. So keen are its perceptions of danger, and so silently and rapidly can it leave all danger behind, that the best trained hunter is repeatedly made to recognize his own stupidity when the wits of the two are brought into competition. Some of the many other circumstances favoring the moose are the splendid cover of their range, their failure to herd in large numbers like the caribou, their great strength and hardihood, the immensity of their territory, so far removed from contact with civilization, and the fact that while Indians are now much better equipped than in former years for moose destruction, their numbers are rapidly decreasing rather than increasing. Around the head waters of the Stickine, Pelly, Liard, and Nelson rivers in northwest British Columbia, is a country of vast extent shut in from all the rest of the world, a great untrodden wilderness. It is a favorite range of the moose. The Indians, one of its enemies, are dying; and no better proof of the inability of the wolf to cope with the moose under ordinary circumstances is necessary than that right in the very heart of this great moose range I have known wolves in awful hunger to prey upon their own numbers through inability to capture the moose.

Hunting. — To become a successful moose hunter is to reduce hunting to a science, and to

undertake to describe the features involved and the methods of the hunt in detail would require a volume; moreover the art is one that can be acquired only by actual experience, and all that could be written for the uninitiated would be of but slight service. To know how to hunt any animal is to know its habits and peculiarities. The habits of the moose are not so difficult to learn, but he lives so much in the thick brush that many of his little eccentricities are hard to understand, and require much time and patience to master them. Very much depends upon the time of year in which one is hunting, as to the methods employed. September 15 to November 15 is the best season, but in countries where it is necessary to protect the animals they should not be hunted before the 15th of October. When the hunter pitches his camp right in the thick of a moose country he should select, if possible, some very secluded nook. He should avoid, as much as possible, chopping, or making any kind of noise. He must live quietly, avoid unnecessary big camp-fires, and leave the pipe in camp when setting out for the hunt. The scent of the pipe will travel much farther on the wind than the scent of the hunter. Decide upon the country to be hunted; ascertain the direction of the wind, and make your detour so as to penetrate the hunting-ground in the face of the wind. If the

wind shifts, change the course of travel to suit, or work back and forth, quartering to the wind. Be very careful in turning a point of the woods or in mounting the crest of a ridge. Eyes and ears should be alert; don't be in a hurry; the greatest precaution is always necessary. Keep a sharp lookout for footprints; if fortunate enough to find fresh ones, ascertain the general direction in which the animal is feeding, If trace of the hoofs is lost, observe the croppings from the brush, the direction the grass or weeds are bent, the freshly overturned leaf, and, better than all, estimate if the animal had passed this point since the wind was from the present point of the compass; if it has, you can afford to take chances on its feeding and travelling with the wind. Note the contour of the country ahead, and calculate upon the character of it as nearly as possible, and where the animal in its leisure would be most likely to wander; skirt this at a safe distance either to right or left, as most favorable, keeping to the highest ground as affording an opportunity to overlook the route taken by the quarry. Never get in a hurry; never allow yourself to get in the wind of the animal. If now and then the locality favors doing so, climb a tree and carefully scan the country in every direction. Remember, when it gets along toward ten o'clock the animal is very apt to lie down for a rest, and

will likely remain very nearly where it stops feeding until well into the afternoon. This is the time of day for the hunter to rest — all save his eyes; the eyes must never rest while moose hunting.

If in pursuing the moose in this manner the course of its path becomes uncertain, the hunter may select some favorable point and approach at right angles for the purpose of determining whether or not he has passed the animal or if it has changed its course; but he must remember that when the time comes for the animal to rest it nearly always doubles back to the right or left of its trail a short distance. One very striking peculiarity in the animal's actions at such a time is that just before lying down it will run for a short distance, as if in play, stopping suddenly, as if acting under orders, when reaching the point upon which it desires to rest. Very especially is this little run apt to be indulged in if there are two or more animals together. It cost me two or three moose to learn this. I was once following three animals in deep snow. I was to the left of them, and had travelled such a distance that I became anxious to locate their trail, and I cautiously made my way to the right to intersect their course, if possible. I did not go more than three hundred yards until I came into their very fresh trail. I climbed a tree and scanned the

country ahead, locating nothing more than the trail for some distance through the snow. I followed this for a short space, and came to where the animals had been running, making great strides. I calculated that it was all up with me, but decided to follow their tracks around a point that I might get one more look in the direction they had gone, the perfectly natural instinct of a hunter. This was a fatal move; they had stopped short, and were lying down just behind a bunch of spruce not three hundred yards from where they had left a walk. On my approach they said good-by through this clump of pines which screened them from a rifle ball.

A breezy day is always best for moose hunting, as the bluster of the wind makes it unnecessary for the hunter to be absolutely noiseless. The same general principles may be applied in hunting moose in any part of their country — presuming that the hunter stalks his own game unsupported by guides or Indians. Few hunters who visit the Maine woods for moose acquire knowledge of the hunt that would be very helpful to them, if thrown upon their own resources in trackless regions of great extent. There is no game field in America that so nearly affords the hunter a parlor moose hunt as the woods of Maine; but the man who simply enjoys camp life, and is not especially desirous of becoming

an expert hunter, will find greater pleasure in the game fields of Maine than in wilder and more isolated regions.

Previous to the advent of the rifle in the North, the natives secured nearly all their moose by setting rawhide snares for them, but now they much prefer the rifle. In winter when the snow is deep they will often put on a very large pair of snow-shoes (a shoe slightly longer than they are tall) and with these travel with very great ease over the deepest, softest snow in pursuit of this royal game. Often when fortunate enough to run onto the fresh trail of an animal they will follow it for two or three days if necessary, rather than come to camp without it. In the practice of this sort of hunting they often perform some remarkable feats, things that but few white men would care to undertake, for there are few white men that care to or can follow so powerful an animal, until it is run to a standstill, when it has once made up its mind to leave him behind.

I have known but one white man capable of doing this, or who had really trained himself to do it. He lived and hunted in the Cassiar country, northwest British Columbia. He told me he once followed a moose for three days in bitter cold weather before killing it. When he did get it he was a long way from home, and very much worn out. He dressed the animal before it had

time to freeze, and then after a hearty feed of steaks decided to have a well-earned rest before returning home. Spreading the large skin on the top of the snow, hair side up, then his own single blanket on top of that, he rolled himself up in them completely and fell asleep. When he awoke the next day the heavy green skin had frozen solid and held him perfectly fast. He recognized his unenviable position, and commenced to struggle violently for freedom. Luckily he was very near the edge of a bench of earth several feet high, which in his struggle he rolled down. The moose skin struck a tree at the bottom and being frozen very hard broke from the jar and released him. I can readily believe this, because extreme low temperature would render such a green skin almost as brittle as glass.

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